NOVEMBER, 1950

American Engineer

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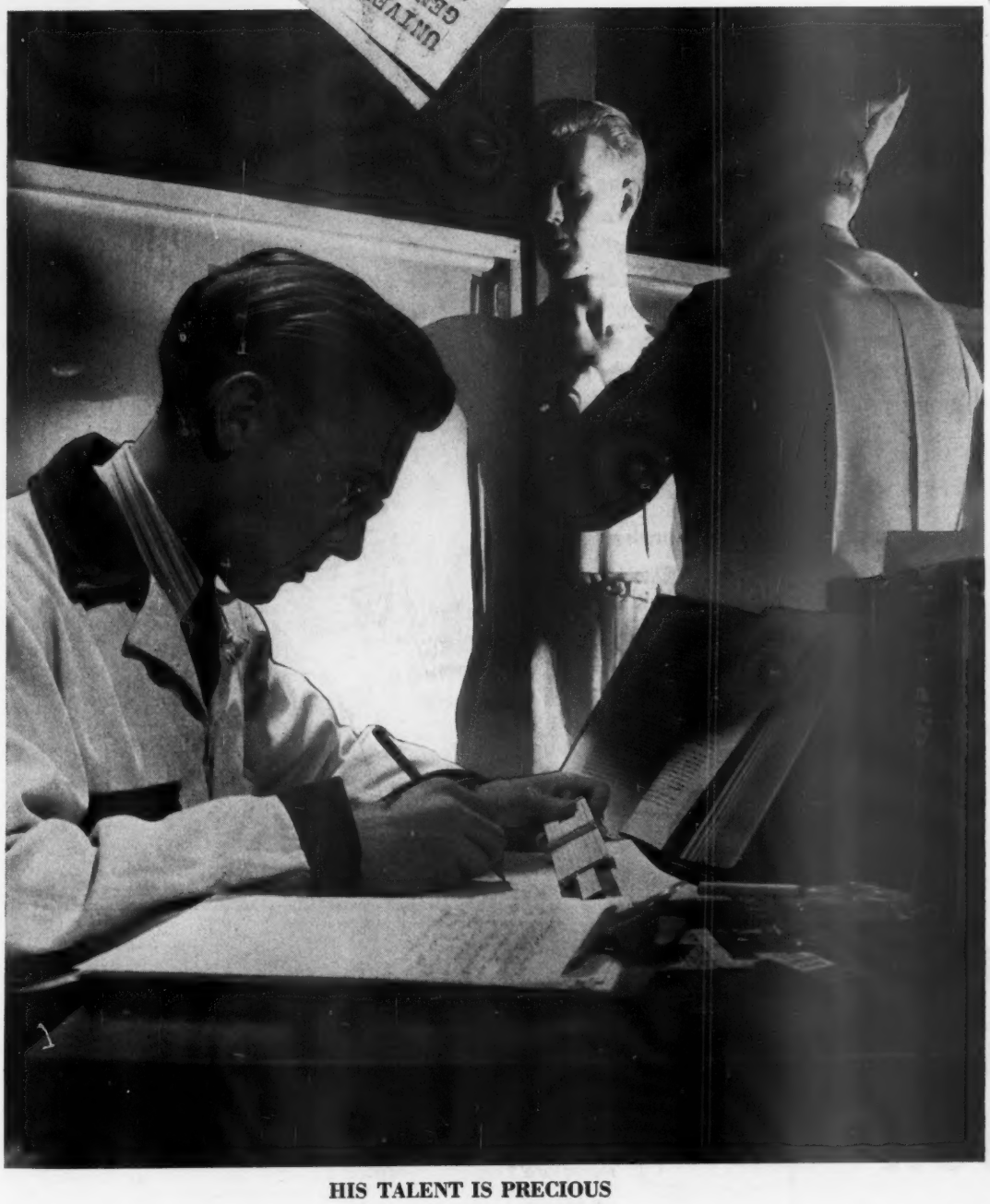
TODAY'S DILEMMA



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American Engineer

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"Basic scientific research is the foundation of modern technology. A vigorous technology is essential for economic welfare in the world of today. It is necessary for the defense of a free society. It has become the very sword and buckler of freedom."

—Commissioner Henry D. Smyth, U. S. Atomic Energy Commission

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• AN EDITORIAL •

It Appears Registration of Engineers Is Here To Stay

One of the more interesting developments to come out of the recent meeting of the National Council of State Boards of Engineering Examiners was the release of a report prepared by that group's Committee on Effects of Registration. The report, analyzing the results of a survey conducted among large employers of engineers, seems to bear out the contention that registration, like motor cars and television, is here to stay.

The Committee's questionnaire concerning registration was sent to 277 organizations throughout the country. It was felt that the people receiving it were for the most part non-engineers, and would generally be without prejudice. Then, too, it was felt that they would be competent to judge and that their opinions on the matter would be particularly valuable and illuminating. We think the results more than bear out this belief.

Here is a summary from the questionnaries:

I. Do you feel that the registration of engineers is advantageous:
   a. to the public: Yes—137; No—12; In doubt—6
   b. to your company: Yes—83; No—59; In doubt—5
   c. to the engineering profession: Yes—131; No—13; In doubt—7

II. In your organization is the registration of engineers recognized:
   a. by requiring registration of engineers for certain positions of responsibility: Yes—46; No—101
   b. by favoring the employment of engineers who are registered: Yes—29; No—111
   c. by encouraging the registration of men in your employ who are qualified for registration: Yes—96; No—52

III. Do you feel registration is
   a. raising the standards of engineering practice: Yes—109; No—25
   b. getting public recognition: Yes—81; No—44; In doubt—15

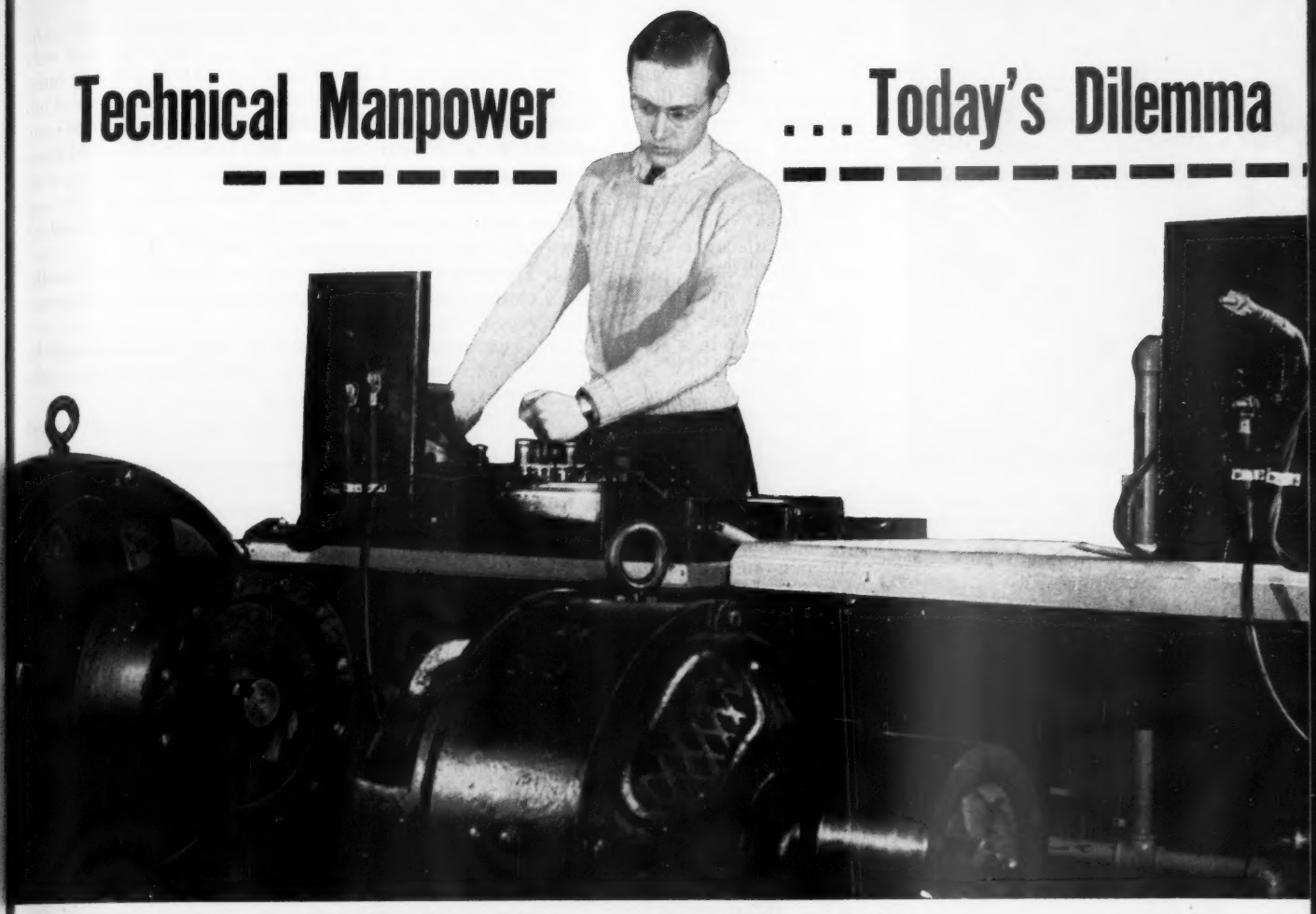
That 137 of these non-engineers consider registration as advantageous to the public with only 12 dissenters is gratifying. The vote of 83 to 59 on advantage to the company is quite different. This is to be expected, because top men in many organizations feel that by their own methods of selectivity, weeding out and training, they can be assured of the competency of their engineering staff. Moreover, there is a not uncommon feeling that registration can add little to graduation from an accredited engineering curriculum in assuring competency. In such cases, of course, the aims and ideals of registration are not fully understood.

The tally on requiring the registration of engineers in certain positions shows, Yes—46, and No—101. If from the 46 affirmatives there were subtracted those of certain state jobs where registration necessarily is made a specific requirement, the record would be even more unfavorable, showing simply that compulsion is not common practice. Discrimination in favor of registered men, 29 to 111, is clearly not a common practice, probably in a large part because discrimination generally in all matters is regarded as unfair and undemocratic. However, what sting this rate gives to the most ardent supporters of registration is much soothed by the fact that 96, against 52, say that registration of men who are qualified for registration is encouraged. It is not likely that many of the 52 would actually discourage registration.

To the question whether or not registration is raising the standards of engineering practice, the vote was 109 in the affirmative to 25. It is not difficult to see that non-engineers in many private industries are cognizant of the value of registration to the profession.

We think the NCSBEE Committee has done a real service in compiling the figures reviewed above. In summation, one conclusion can be drawn: the toe-hold days of registration are now history but we cannot afford to relax; an extensive and complex job of education still must be conducted. To this end NSPE has long been dedicated.

Technical Manpower ...Today's Dilemma



This electrical engineering student faces an unknown future.

EARLY last month, General Lewis B. Hershey, National Selective Service Director, in a speech in Washington, said that the American people have been sold "a lot of baloney" to the effect that scientists and professional men should be deferred from military service because there are not enough of them.

"Sure, we don't have enough of them," Major General Hershey said, "we've never had enough scientific people —but there are never enough men over there fighting, either."

"If it hadn't been for Korea, a lot of those engineers, chemists, physicists and so forth wouldn't be able to find themselves a job in their fields unless they were in the upper third of their class," he went on to say. "I think it's time we had Americans first, and lawyers, doctors or scientists second."

Hershey's talk immediately drew comment from the NSPE, the Federation of American Scientists and other organizations. Paul H. Robbins, NSPE's Executive Director, declared in a statement that, "General Hershey's remark that the discussion of the status of engineers and scientists in relation to the total national defense is a 'lot of baloney,' indicates a failure to take cognizance of the critical results flowing from our experience in this field during World War II."

"No one argues with General Hershey that the Number One job is to supply the armed forces with the fighting manpower it needs," Robbins pointed out. "But let us not put these men at the front without the best equipment and weapons which only America's technical men can conceive and produce."

The draft who-and-when pot is still simmering, with Hershey's "baloney" speech serving only to open discussion on old problems. The entire situation had that "this is where we came in" atmosphere, as it was not too many years ago when the arguments were brought out for the first time. Now, with the experiences of World War II behind the nation, we are acutely aware of the mistakes made last time, and there is a strong determination not to repeat those mistakes. Because professional engineers are so thoroughly involved and will be for a long time ahead, a review of the entire picture as it is now focused upon the screen, is mandatory for the profession.

Three problems face us at this time:

1. How to utilize technical talent in industry
2. How to utilize technical talent within the armed forces
3. How to provide for the continuance of the training of scientific, professional, and specialized personnel.

The utilization of talent in civilian plants was handled in the last conflict through cooperation between industry and the local selective service units. The system drew some but not too much complaint, and it would probably be used again if an emergency should oc-

". . . one consideration is to see that 'we keep the seed corn coming' for future growth and development by maintaining in full vigor, year-in-year-out, in wartime as well as in peacetime, the staff for scientific training in the universities. The corollary of this is that we also maintain the flow into the universities of the talented youngsters who can carry scientific and engineering training over to new accomplishment."

Gordon Dean, Chairman,
Atomic Energy Commission

Really up a tree. Too many engineers in WW II were misused in the services. Some electrical engineers strung wire in the Signal Corps.

cur.

But Problem Number Two presents real difficulty, and here the profession need not expound its own theories. Those with short memories need only back-track two years to discover the answers to many of our present questions along this line. They can be found in a report prepared by a special Army board relative to the utilization of technical talent in World War II. The Army report was sharply critical of the use of technical-scientific personnel during the war and conceded that the study revealed "serious shortcomings in previous procedures."

Analyzing the case histories of 15,157 scientists and engineers in the armed forces, the report—released in January, 1948—was prepared for Maj. Gen. A. C. McAuliffe, deputy director of research and development for the Army, by Dr. David M. Delo, chief of scientific manpower for the services' Logistics Division. The Army stated that the report provided "basis for future planning in order that maximum application of science and scientists to national defense may be assured during any future emergency." We are now most certainly in an emergency of the gravest proportions but the report, once hailed by the Army itself, seems to be gathering dust in government offices.

Documented with comments, mostly complaints, from former officers and men who had been trained scientists or engineers in civilian life, the report indicated that only about 30 per cent of the more than 15,000 persons interviewed believed that their "specialized abilities were utilized throughout most of their war service" in jobs commensurate with their training and experience. In addition to citing statements by individuals that their talents were "totally wasted," or that their contribution to the war effort was "negative," the study set forth the following general indictment of manpower utilization.

1. There had been no effective pre-war planning for allocation and use of our national scientific manpower resources.
2. There was a "general lack of detailed knowledge" by both civilian and military organizations relative to the importance of technology to warfare.
3. Numerous changes in Selective Service operations and emphasis were caused by unanticipated manpower needs of the armed forces during the war.
4. The organization and assignment practices of the armed forces originally were based on pre-war policy of "officer competence in any field."
5. Scientists entering service were subjected to a "requisition system" of assignment at reception centers that

"We enter the post-war period with a serious deficit in trained scientific personnel . . . in my opinion, we have dr too heavily for non-scientific purposes upon the great nat resource which resides in our trained young scientists and e neers. For the general good of the country too many men h gone into uniform, and their talents have not always been f utilized. With the exception of those men engaged in war search, all physically fit students at graduate level have b taken into the armed forces."

"Science, The Endless Frontier"—1 By Dr. Vannevar Bush, Then Directo the Office of Scientific Research Development

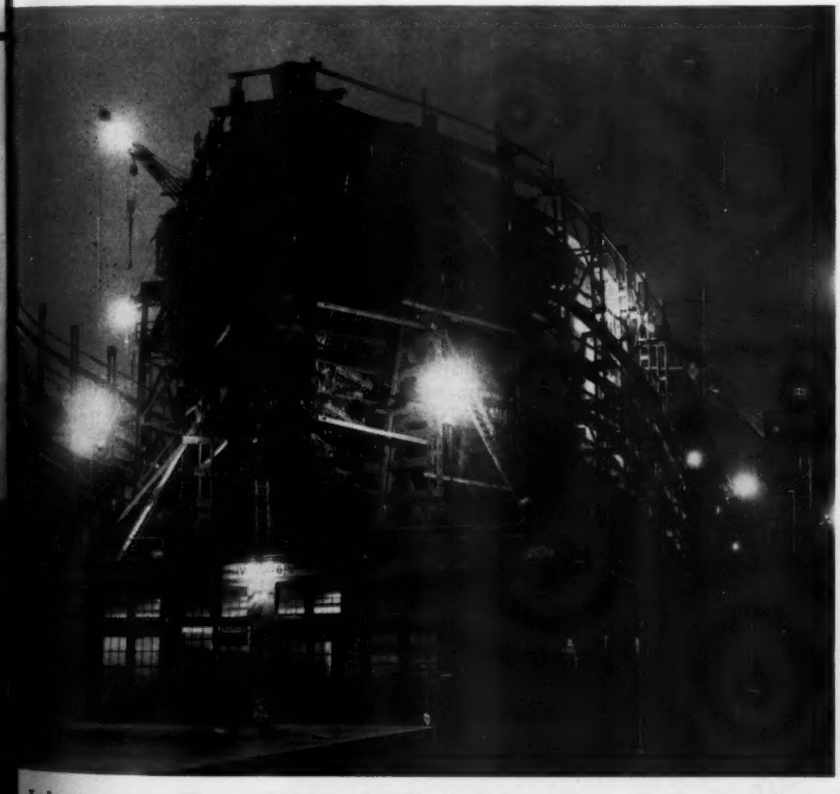
The services must have a fair share of technical talent for professional engineering jobs. These men are with an Engineer Corps pipe line outfit.

prevented pooling of scientific manpower for future specific use of their talents and training.

6. The new technical demands of the services during the war led to "repeated calls" on civilian scientists and engineers while many were being improperly used in the armed forces and could "readily" have been transferred.

In addition to the thousands of case histories of service men, the study called for the views of "outstanding" American scientists. Many of these, it was stated, complained on the basis of their own military experiences that the assignment of scientists under the Selective Service system was "wasteful of scientific manpower because of the absence of scientific selective procedures."

Few responsible people have ever disagreed with the report. It was pretty common knowledge that we had "missed the boat" on the technical manpower utilization business during World War II. Much of the early criticism came about by comparing our handling of the situation with that of our allies. English, Russian and French physicists, chemists and engineers were still engaged as such even though they were in the army or navy. But our own Selective Service refused to look to the right or to the left. Men who should have been employed in laboratories or in designing weapons were often assigned to tasks that bore no relation to their civilian experience. The policy was so obviously wasteful, the protests so loud and insistent, that at last official action was taken. The report was the action but now, when it should be relied upon for guidance, it is apparently being given passive resistance.



Industry, too, will need thousands of talented engineers in the crucial years ahead.

There were fewer than 50,000 scientists and engineers in uniform during the last war, a number almost negligible compared with the strength of our armed forces. In light of this, the inference that to place them in jobs where they belong and where they could contribute so much, is weakening the position of the many at the front, seems nonsense.

In conclusion on Point Two, then, what is a possible solution to the dilemma? It would appear that a special body within the armed forces is needed to serve as a liaison between the sciences and the services. Unnecessary physical standards should be abandoned and men should be given rank commensurate with their responsibilities and duties. As of this writing, no provisions along this line have been made despite our nearness to real emergency and our sad experience in the past.

Problem Number Three provides the only movement on the present static picture. There is at least some evidence that work is being done to provide for the training of tomorrow's engineers and scientists. Last month a special board appointed by General Hershey in 1948 to make recommendations concerning the training of scientific, professional, and specialized personnel, made its report. This combined report of six Scientific Advisory Committees (Agricultural and Biological Sciences, Engineering Sciences, Healing Arts, Humanities, Physical Sciences, Social Sciences) simply suggested that the intelligent be deferred to continue their studies, whatever those studies may be. That is, under the plan every high-school student in the country would take an aptitude test. Then, if his score were high enough, and if he met certain other conditions, he would get deferment and be able to go on to college. While in college he would have to keep his grades in the upper percentile of his class in whatever course he chose—engineering, journalism, law, or any other—or he would immediately be dropped from school and become eligible for the draft. If the man wanted to be deferred after college, he must work at the calling for which he was trained, in a job that is "essential to the national health, safety, or interest."

The plan has Hershey's endorsement and has gained acceptance generally. There are, however, several points about the plan as it now stands that appear as weaknesses. First, if the bright students are left to decide on their own which courses they want to study, is it now possible that such "tough" courses as engineering, medicine, etc., are going to get the go-by in favor of something easier? If this be the case, we are not going to be training the number of engineers we generally do. Possibly the solution here would be to levy upon each institution a percentage of students it *must* enroll in each course. The rate could be adjusted from time to time to correspond with the needs of the nation. But as the plan now stands, it seems to invite students to take the easy way out.

Another point to be considered is the aptitude test. Educators long familiar with such tests have repeatedly stated that the results of written tests are seldom conclusive. Some students are never able to excell in written cut-and-dried tests, yet in practice, due to personality traits, leadership, etc., they are more outstanding by far than the "book worm." Then, of course, it is a well known fact that the majority of our outstanding men never got an "A" in college. It is difficult, however, to make a suggestion as to how Hershey's Board of Educators could improve upon this salient feature of their plan, but possibly a more accurate method of discovering the "fit" can be determined than by a written test alone.

(*Continued on page* 28)

Hospitals such as this Naval one at Dublin, Ga., need engineers.

Job Analysis No. 1:

The Hospital Engineer

By J. A. Millard, P. E.,

Chief Engineer, Charleston, W. Va., General Hospital

ONE of the lesser-known but nevertheless vital fields in the profession is hospital engineering. Generally speaking, the Hospital Chief Engineer is responsible for safeguarding of life, health and property when the application of engineering principles and data are required. While he may work with his hands occasionally, he works primarily with his mind, and constantly makes use of basic scientific principles to seek the practical application of the forces of nature and materials of nature for the use and benefit of mankind.

Are You Qualified?

If you think you would be interested in this field, check your abilities against this arbitrary listing of the characteristics of a good professional Hospital Engineer:

1. He bases his policies upon facts.
2. He uses his knowledge to achieve results.
3. He builds upon his experience rather than upon guesswork or superficial cleverness.
4. He uses his imagination tempered by experience.
5. He thinks his way through to the ultimate goal before beginning a task.
6. He understands the language of both professional and layman personnel required to operate, maintain and administer the needs of a hospital.
7. He establishes a safe, efficient and uninterrupted operation of all plant equipment and facilities, including surgical and medical equipment, appliances or apparatus where items require routine inspection and maintenance for safety protection.
8. In case of a breakdown or emergencies, he uses his ingenuity and resourcefulness to restore operation quickly and under adverse conditions.
9. He must be familiar with every piece of equipment used throughout the hospital, including many items such as: building materials, roofing, furniture, plumbing equipment and supplies, electrical equipment and supplies, sanitation and sewerage, steam generation, refrigeration, elevators, operating rooms, cast rooms, emergency rooms, delivery room, oxygen and suction machines, x-ray, electrocardiograph, metabolism, physiotherapy, kitchen and dining room, laundry, and many other devices.
10. He must be capable of advising the administrator as follows:
    a. When purchasing any new equipment, apparatus, appliance or other devices.
    b. When planning, or designing the construction or operation of additional facilities.
    c. When formulating policies and administrative procedures involving engineering, plant operation, maintenance and safety principles.
11. He is a man with a broad engineering background with the ability to coordinate his responsibilities with all department heads.
12. In addition to his engineering and administrative ability, he must be willing to work hard with his hands and to do unpleasant jobs that are characteristic with a hospital.
13. Above all, he must trust and be loyal to his administrator. He must be capable of being a good follower, in addition to his ability to lead others.

Most hospital administrators will agree that if they had a professional engineer capable of fulfilling the characteristics listed above, many of their troubles would be over. However, there are many hospitals that take the attitude that their funds are insufficient to employ an engineer of this caliber. This is a false evaluation of the situation. Actually, many hospital officials do not have the necessary knowledge to evaluate their engineering requirements, and to employ a man who can supervise the many tasks involved. The results are that they hire an artisan—and call him an engineer.

This practice over a period of years will cost a hospital many thousands of dollars more than that required to pay a fully qualified professional engineer. In addition, it is a direct violation of the law, now in effect in many states, pertaining to Registered Engineers. In general, it is illegal to employ a man as an engineer who is unregistered by the state registration board for engineers, where the safeguarding of life, health or property is concerned, and when such services require the application of engineering principles and data. Daily application of engineering principles are definitely used in hospital plant operation and in some cases the actual treatment of the patient.

Analysis of operating cost records will show that hospital plant operation and maintenance cost, can be, and has been, reduced by 30% to 50% upon employing a qualified engineer. Thus, taking a hospital with a $60,000 annual cost for plant operation and maintenance, the engineer can save from $18,000 to $30,000. Therefore, such a hospital could afford to pay an engineer $10,000 per year and still save money.

Are You Eligible?

Any graduate engineer from an approved Engineering College who has a degree in Electrical Engineering, Mechanical Engineering or Industrial Engineering is basically qualified to become a good Hospital Engineer. As you know, these men after four years of experience in a responsible engineering position are eligible for registration, which qualifies them by law to practice engineering. However, since Hospital Engineering covers such a broad field, an additional two years of direct hospital experience should be required to fully qualify one as a trained hospital engineer.

Many hospitals with experienced maintenance men already employed, hire engineers just out of school so they can be trained in the practical application of hospital plant operation and maintenance. These young men are frequently utilized in making engineering analysis showing operating efficiency, and with the aid of the older experienced man, corrections can be made to reduce the cost of plant operation and maintenance.

Too, the hospital engineer must have a means of exchanging his ideas with other engineers. This can best be done through the Technical Sections of the American Hospital Association, giving the hospital engineer and maintenance supervisors a chance to meet at intervals, in state, sectional and national meetings.

The American Hospital Association is providing a special course to orientate engineers with equipment and methods peculiar to hospitals. It is further suggested by the AHA that on-the-job training could be improved by rotating the new graduate engineer from one hospital to another every 30 days. This would give the young engineer a broader knowledge and develop ideas for improving his parent hospital.

The engineer should have access to the hospital library and be encouraged to make full use of it. He should read all current journals to keep abreast with the engineering aspects of medical and hospital developments, as well as engineering subjects.

The engineer can be of outstanding aid to the doctors, pertaining to their mechanical needs. He must learn to obtain the confidence of the medical and surgical profession, who are scientists at heart and have outstanding ideas on new equipment and devices. The engineer is the logical person to help in developing such ideas.

The professional engineer is only a small gear in the human machinery that runs a hospital. However, if that gear fails, the whole hospital may be affected. He has a definite responsibility in helping to maintain smoothness in the composite organization required to operate and maintain a hospital.

How Can You Obtain the Job?

If you are interested in an engineering position of this type, contact the Technical Section of the American Hospital Association group nearest you. In addition, write to hospitals in your vicinity stating your qualifications and requesting applications, or insert a classified ad in an American Medical Association publication stating your interest in becoming a Hospital Engineer.

Applications of engineering principles are used in all phases of hospital operation.

Here Is A Complete Answer To

WHY BELONG?

By John T. West, Jr., P.E.

Executive Secretary, Pennsylvania Society of Professional Engineers

ABOUT a year ago I was talking to a friend about joining our Society and thought that I had him pretty well sold, when another friend, who happened to be present and who was a member, invited himself into the conversation to the extent of saying, "Why do you want to join? I'm a member and am thinking of resigning!"

I was very much discomfited and my sales talk was completely ruined, but the thing which struck me and has caused me to wonder since that time, is the fact that the man who butted into the conversation was one for whom I had great respect, whose judgment was usually good, and who personally was usually courteous and considerate. Here he had gone way out of his way to be impolite and inconsiderate by inviting himself into a conversation and to spoil all of the sales talk that I had given.

Since that time I have heard the same, or equal remarks by some others, both present and prospective members, and the thought occurs to me that we should "Stop, Look and Listen." Before we get too excited about getting new members, we must learn to hold what we have. It would do the Society little good to gain 1,000 new members if we at the same time lose 1,000 old members.

With the idea that it was time to do some thinking and ask myself some questions, I set down the questions that occurred to me and they were:

1. What do the members get out of it?
2. Why do we need another society?
3. Couldn't the things we say we want to accomplish be done better by the already established societies?
4. What are we trying to accomplish anyway?

It seems that the last question is basic and until it is answered it is almost impossible to answer the others.

WE have all heard answers such as, "to develop high ideals and ethical standards among engineers" and "to secure public recognition to engineers as a learned profession."

Those answers remind me of the recently popular song, "Far away places with strange sounding names." They sound good, especially if delivered with a Harvard accent, but they seldom mean anything to a member unless he has been given a job in a Chapter where he has learned the hard way, the true meaning of the phrases and how the Society is trying to help the members.

The man who isn't lucky enough to become busily engaged in Society work eventually comes out of his trance and asks himself, "Why did I join the Society anyway?"

And so it is about time that we do something to inform ourselves in commonsense language what it is all about. I hesitate to use that word "commonsense" because the most outstanding thing about commonsense is that it is too uncommon, but at least let us try to use it in setting down what we believe to be our objectives.

Those which I have set down are:

(1) To get the public to accept us as professional men rather than as mechanics, electricians, draftsmen or brush cutters.

As an example of what I have in mind, I am reminded of the story about the Empire State Building as told by Dr. D. B. Steinman. Dr. Steinman stated that the design of the Empire State Building was about 92% a question of engineering, but after the building had been finished it was noted that a tablet had been set up in the lobby noting the name of the architect who designed the building. Some Professional Engineers went to the owners and asked why the Engineer's name did not appear and were told "there were about 30 or 40 different crafts engaged in building this structure, including bricklayers, plasterers, stone masons, carpenters, plumbers, pipe fitters and engineers, and we couldn't possibly name all of them"!

(2) To be able to demand reasonable compensation for our work commensurate with the time, expense and effort necessary to prepare us.

I would like to give a personal example of what I mean by this. Shortly after entering the engineering field I was the instrument man in a large power plant, having for my duties the care of flow meters, pressure gages, thermometers, draft gages, etc. One day a manufacturer of air compressors came to the superintendent of the plant and asked if he could borrow a flow meter so that he could make tests on one of his air compressors, explaining that they rated their compressors according to the number of air hammers that they would take care of and that they were having some complaints about lack of capacity and wanted to find out just how well their compressors performed.

UPON questioning it was found that they knew nothing about how to set up or use flow meters and they asked if it would be possible to have me do this for them in my spare time. As a result, a number of tests were made after which they asked me to make up a report for them, giving the results of the tests and telling them what seemed to be wrong with the compressors.

I found that the volumetric efficiency was extremely poor due to the large clearance at each end of the cylinders. The effect was somewhat like trying to pump up a bicycle tire without any valve to hold the air into the tire. On one stroke the air would be compressed and on the back stroke the same air would be expanded with the result that very little of the air was available for work.

The manufacturer did not agree that this could be true, but asked me to send a bill for my work. I thought that the work should be worth at least a dollar an hour and sent a bill for $65.00. After some time I received a check for $35.00 and a letter saying that was all they thought it was worth. However, the air compressor design was completely changed and my recommendations were embodied in the changes! The same people had not hesitated to spend hundreds of dollars for pulleys, larger motors and labor in speeding up the compressors but to learn what was fundamentally wrong was only worth $35.00!

(3) To safeguard the public as well as our profession by securing passage and enforcement of adequate laws to make sure that all who practice Engineering are qualified.

Notice that I said "the public" as well as the profession. Sometimes we forget the public but unless we constantly keep the Public in mind we have no right to the protection which registration gives us as a Profession.

(4) To be worthy of the respect and compensation which we strive to obtain by being well prepared and by faithful and diligent attention to the work entrusted to us by our clients or employers.

(5) To prove ourselves *Good Citizens* as well as good technically trained men by taking part in civic enterprises and showing an interest in public affairs.

As an example of what might be done along this line, I would call attention to that outstanding engineer, Ex-President Hoover who, I believe, will go down in history as one of the most capable men who ever held public office, but his abilities in Public Service are only now being fully recognized. He was just ahead of his time!

(6) To instill into the minds and individual philosophies of members of our profession an understanding and acceptance of the ideals of ethical conduct which will enable us to get along with each other and with the public as learned men should — in accordance with the golden rule!

Engineers should never knock each other but should treat everyone as they would like to be treated.

(7) To assist young men entering the profession to have a true perspective of their *responsibilities* as well as their *importance*.

Many young men getting out of college are puffed up with their importance and they must realize and accept their responsibilities before they can bring credit to their profession. It is our responsibility as a Society to do what we can to accomplish this.

THERE are other things which might be included but to me, in my personal philosophy, these seem to be the most important. Note that the first two points mentioned are entirely selfish and that the third point is at least 50% selfish. This is not unnatural since we are human and want to improve our positions in life, but when we analyze the objectives we find that those which are selfish must take a back place — we cannot hope to receive benefits until we *give* something in the way of benefits to the public, our clients, our employers, and our fellow engineers and surveyors.

Back in the mid 20's there was a popular game called "Put and Take." It was played with a metal or wooden top of many sides which was spun by hand and when it would topple over, one side would face upward. On each side were the words "put" or "take" and a number, and the players would put into the pot or take out from it the number of cents or dollars shown. It was soon found by all players that they could not possibly hope to take from the pot all of the time and that in order to continue to play they must "put" as well as "take." Life is like that. As engineers, if we want recognition and respect we must first earn them!

Let us then take another look at those objectives that I gave as my personal engineering philosophy and see what we are doing about them.

Public Acceptance

We can do something about this and are doing something about it in the way of:

(a) Publicity of our Chapter activities as well as our State and National Society activities. The public has had a very vague idea of what an engineer was and we can improve and broaden this understanding with our publicity.

(b) Testimony in Courts. It has been pretty well established now that in order to give engineering testimony in courts one must be a registered engineer. This state of affairs has been brought about largely through the efforts of our Society.

(c) Inability to collect for engineering services when not a registered engineer. A recent court decision in Pennsylvania states that a person who represents himself as an engineer but is not registered cannot collect for professional engineering services.

Reasonable Compensation

(a) Our Society has published a Schedule of Minimum Engineering and Surveying Fees and Salaries and in addition to supplying a copy of this schedule to each member we find that it is in big demand from employers and government agencies and these schedules have been accepted by many employers and agencies as a standard basis of fixing salaries as well as fees.

(b) We also have our Employer-Employee Committees in the State Society and in some of our Chapters whose purpose it is to develop better relations between employers and engineer employees to the ultimate goal of having the employer consider that he is in the position of a client and that the engineer employee is a member of a learned profession who is in much the same category as a doctor or lawyer who has been called upon for advice and who should be treated with the same respect.

Safeguarding Public and Profession

(a) Registration Acts have been enacted in all 48 States and 4 Territories of the United States, making it necessary for those who would practice engineering to prove their qualifications.

(b) The Taft-Hartley Labor Act contains professional provisions which make it possible for professional employees to be considered separately from craftsmen and allows them to choose what, if any, bargaining agent they might select in dealing with management. Your Society is making every effort to have these professional provisions retained in any Act which might be enacted to replace the Taft-Hartley Act.

(c) During the last session of the Pennsylvania General Assembly an Act was passed which allows the Department of Public Instruction to bring injunction proceedings against any and all who practice engineering without being duly registered.

(d) The Society has, in several cases, brought action against unqualified persons who practice as engineers or surveyors and more of this will probably be done in the future.

(*Continued on page* 32)

The Professional Engineer: Responsibility, 100%
Recognition, ?

We Can Get Away With It

By R. A. Merrill, P. E.,

Past President, Tennessee Society

"THERE it is and there's no getting away from it." So reads a statement made in an Editorial of a recent issue of THE AMERICAN ENGINEER. The statement is preceded by a resume of a talk given some time ago by an eminent Engineer wherein he told a group of young Engineers what he considered the "cold facts" of the Engineering Profession. He painted a gloomy picture of the uncertain income OR uncertain job tenure ahead; the comparatively poor pay; the great mortality of students at the Freshman and other levels and of Graduates at various levels; and, in summary, of the "tragic waste of economic and human values." And then:

"There it is and there's no getting away from it." INCOMPREHENSIBLE!! Surely with our well known abilities to build proper structures and equipment, we also have the ability to build a proper training program *if we have the will to do so.*

And it really is not too difficult! A strong start has already been made. Properly modified and developed there can be

A. A separation of fundamental engineering students (those whose natural instincts and abilities permit the development of a competent end product) from superficial engineering students (those to whom the "romance" of engineering appeals for a time—but for a time only);

B. A great reduction in "mortality"—particularly in the 60% of entering students who do not graduate but also of a part of the 45% of graduates who leave our vocation, if indeed, this percentage should properly *be* reduced;

C. Greatly improved prospects for the ultimate development of PROFESSIONAL Engineers; and

D. A great improvement in "Job Insurance"—the provision of secondary training to provide work to which one may turn when circumstances fail to provide professional employment.

All this could be accomplished by providing that *every* student who desires an Engineering degree of any character, must first enter and complete a two-year course in a modified type of TECHNICAL INSTITUTE. Technical Institutes have been established for some years now, have done an excellent job and have suggested the path to take for future engineering education. Most of their potential value has not yet been achieved due to many factors—none of which cannot be overcome. "Traditional" courses, a frequent feeling that this education isn't up to proper standards; very meager support by engineering educators; prominence in the field, of proprietary institutions; etc. have slowed the expansion.

It has only been since 1947 that ECPD has accredited this type of education. And in common with "standard" curricula, there presently is practically no close agreement in course content or length between the approved institutions. It therefore seems in no wise improper to suggest a variation as having a number of different but utilitarian features, such that it *could* form a basis for all advanced engineering OR Trade training.

The first two semesters are identical for both the College Preparatory and the Terminal Trade groups. The Pre-Engineering viewpoint is largely stressed here. Then follows four four-week periods of on-the-job training where the viewpoint is essentially that of the TECHNICIAN. The third semester is identical, again, for both groups but here it is that the final decision must be made as to which option to elect. If the decision is to continue toward an Engineering degree, Sophomore English and Economics are completed and these with the other courses will provide the equivalent of three full semesters of standard engineering college work. By spending one full summer of study taking Physics, Calculus, etc., it will be possible to continue the following Fall as a regular Junior. Otherwise three years with a relatively light load will do the trick.

FOR those who decide on the Terminal Trade program, the emphasis during the fourth semester is on developing skill in the trade selected. This is followed by four more four-week periods, each, however, on the same trade with progressively more responsible work being required. The Technician works with four different groups of students and has excellent opportunities to develop administrative abilities in his chosen field.

This curricula has been developed over a considerable period of time and each part of it plays a specific part in the whole. A few descriptive comments will suggest the purposes planned.

A. Freshman MATHEMATICS (Algebra, Trigonometry and Analytical Geometry) are provided for three hours a week the first three semesters. In addition, since many of these students will be somewhat more slow of comprehension, there is provided an optional two-hour problem period each Tuesday morning for these three semesters. There will be additional home study required with or without the problem periods.

B. ENGLISH. Two years of College English are provided for the C. P. group. For the T. T. group, "an adequate knowledge" of English is required. The individual may take two, three or four semesters to get this as the case may be. It is the equivalent of thoroughly satisfactory Freshman English.

C. CHEMISTRY. The equivalent of eight semester hours of College Chemistry is specified plus, again, the optional two-hour problem period and in this case it is available both semesters. The laboratory period the second semester is felt to be more valuable than shorter periods both semesters.

D. ECONOMICS is accepted as required knowledge for all college students. Advanced Economics for the C. P. group will be concerned with Economic Geography, Money and Banking, etc.

E. ENGINEERING PROBLEMS. This general survey of engineering activities will be carried on for three semesters. It covers the types of problems dealt with by both the Engineer and the Technician in the various fields. It includes the use of the Slide Rule, Sketching, Report writing, etc.

F. DRAWING. Monday afternoon is devoted to drawing each of the four semesters. The first two cover fundamental principles. The third is an introduction to descriptive geometry. The fourth—for C. P. group—is an introduction to some specialized field of drawing while for the T. T. group it is a review and extension of Blueprint Reading.

G. SHOP. A major activity in any Technical Institute is its Shop work. Here it is planned that the first two semesters shall have an afternoon devoted to hand-tools used by various crafts plus elemental machine tools. There is also an afternoon devoted to the assembly and dissembly of machine parts since in this "machine age" it would appear that all engineers AND technicians should have more than a passing knowledge in this field. Generally automobile or diesel mechanical parts are studied. Lectures and demonstrations with no home work required.

During the summer it is probable that each student will definitely determine the TRADE of his choice, either as his vocation or as "insurance." This choice is followed during his third semester by intensive training therein three afternoons a week. This is continued in the fourth semester for C. P. students while for the T. T. group three full days are allotted plus the second summer's work.

An afternoon a week during the first semester is devoted to studying a different trade in detail—its

(*Continued on page* 33)

1st Sem.—C. P. & T. T.

	M	T	W	Th	F
8.30	Alg.	E. P.	Alg.	E. P.	Alg.
9:30	Engl.	Alg. Prob.	Engl.	Chem. Prob.	Engl.
10:30	Chem.	"	Chem.	"	Chem.
12:00					
1:00	Dwg.	Shop	Trades Anal.	A. M.	Clinic
2:00	"	"	"	"	"
3:00	"	"	"	"	"
4:00	"	"	"	"	"

2nd Sem.—C. P. & T. T.

	M	T	W	Th	F
8:30	Trig.	E. P.	Trig.	E. P.	Trig.
9:30	Engl.	Trig. Prob.	Engl.	Chem. Prob.	Engl.
10:30	Chem.	"	Chem.	"	Chem
12:00					
1:00	Dwg.	Shop	Chem. Lab.	A. M.	Clinic
2:00	"	"	"	"	"
3:00	"	"	"	"	"
4:00	"	"	"	"	"

3rd Sem.—C. P. & T. T.

	M	T	W	Th	F
8:30	Anal. Geom.	E. P.	Anal. Geom.	E. P.	Anal. Geom.
9:30	Engl. 2	An. Geo. Prob.	Engl. 2	Econ. Prob.	Engl. 2
10:30	Econ.	"	Econ.	"	Econ.
12:00					
1:00	Desc. Geom.	Trade Shop	Trade Shop	Trade Shop	Clinic
2:00	"	"	"	"	"
3:00	"	"	"	"	"
4:00	"	"	"	"	"

4th Sem.—COLLEGE PREP.

	M	T	W	Th	F
8:30	Short Hand	Mat. of Engr.	Short Hand	Mat. of Engr.	Short Hand
9:30	Engl. 2	Typew.	Engl. 2	Mat. Lab.	Engl. 2
10:30	Econ.	"	Econ.	"	Econ.
12:00					
1:00	Spec. Dwg.	Trade Shop	Trade Shop	Trade Shop	Clinic Exam.
2:00	"	"	"	"	"
3:00	"	"	"	"	"
4:00	"	"	"	"	"

4th Sem.—TERMINAL TRADE

	M	T	W	Th	F
8:30	Engl. Rev.	Trade Shop	Engl. Rev.	Trade Shop	Engl. Rev.
9:30	Trade Critique	"	Trade Shop	"	Trade Critique
10:30	"	"	"	"	"
12:00					
1:00	Blue Pr. Rdg.	"	"	"	Clinic Exams
2:00	"	"	"	"	"
3:00	"	"	"	"	"
4:00	"	"	"	"	"

The Summer Periods will be devoted to four four-week periods of 40 hours a week. Each will be concerned with field work in one of the four fundamental fields of Engineering — Civil (Surveying Camp); Mechanical (Auto Mechanics Garage); Electrical (Wiring and Radio Shop); and Chemical (Chem. Lab.). The first summer both C. P. and T. T. students participate in these. The second summer T. T. students act as foremen, etc. as an "interneship." Each four-week period will give 6 semester hours credit for satisfactory work.

National Chamber Asks Use of Voluntary Manpower Controls

Believing that compulsions would be detrimental to the defense program, the Chamber of Commerce of the United States today urged use of voluntary manpower controls for rearmament.

With the approval of the Chamber's board of directors, the organization's Committee on Labor Relations reported today:

"The value and effectiveness of voluntary action by both management and workers was well demonstrated in World War II. Such voluntary action should be continued now as the basis for manpower distribution."

If voluntary measures fail, the Chamber committee proposed that any compulsion adopted should be by authority of Congress in legislation containing adequate safeguards and that there should be no directives without specific Congressional authority.

The committee asked employers to begin now to take voluntary action locally, by areas and industries, to lessen any need for government controls. It urged avoidance of labor pirating; proposed making skilled labor available; asked extension of the employment of part-time, aged and handicapped workers and those not normally in the labor forces, and advocated use of training and safety programs.

The committee insisted that wage boosts should not be used as a means of channeling manpower flow into armament or other industries. Such action, the committee believes, would invite vicious competition and defeat the objective of using manpower where most effective.

The committee urged abandonment of featherbedding, monopolistic labor practices and any other artificial restrictions on labor supply. It also asked that there be no arbitrary limitation of hours of work beyond what is required by existing wage-hour legislation.

Whenever government action in the manpower field becomes necessary the committee believes it should be centralized in a single independent war manpower agency, which should include selective service and should cooperate with state employment agencies as presently constituted.

The committee believes the government should not hasten to create any new war labor disputes settlement agency, because:

"Primary reliance for the settlement of labor disputes should be placed on bargaining, mediation and conciliation and other machinery provided by existing law."

The committee recognized, however, that the situation might, at some time in the future, require the establishment of a new agency to settle labor disputes. It recommended, among other things, that such an agency be tri-partite in its operating functions, but all-public in regard to policy-making; that it should not have jurisdiction over any labor dispute until all other means of settlement were exhausted; that it should not exercise wage stabilization functions, and that it should decide cases on the basis of previously-established standards, including the Taft-Hartley Act provisions and the policies laid down by the Wage Stabilization Board.

Stevens To Teach Management

Engineers have a habit of ending up in the management end of industry. Mostly, they just gravitate there, without any special management training to supplement their technical studies.

As reported in *Business Week*, Stevens Institute of Technology, Hoboken, N. J., has decided to fill in the training gap. A new Dept. of Management has been added to its Graduate School. Starting this fall, it will give courses in management problems in production, marketing, and business.

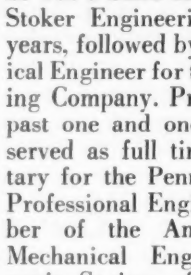
Robert H. Baker, director of the Stevens Graduate School, says the department is an outgrowth of a former department dealing with the Economics of Engineering. The Dept. of Management wil incude 34 courses, many of them new They will range all the way from the management of buildings to municipalities. The department will also conduct research and consulting services.

Plans for the department were based in part on a survey conducted by Prof. F. J. Gaudet, director of the Laboratory of Psychological Studies at Stevens. The survey showed that most engineering graduates turn to production engineering, with a smaller group in the sales end. Since a large part of both groups either become a part of management or enter their own businesses, they need some specialized knowledge of the working of free enterprise.

OUR AUTHORS

John T. West, Jr., P. E., (Why Belong?—p. 10) was born in Philadelphia, Pennsylvania, in 1897 and received his education in the Philadelphia Public Schools and Drexel Institute. During the First World War Mr. West served in the Navy. He was employed for 20 years by the Pennsylvania Power & Light Company as Instrument Man, Test Engineer, Assistant to the Superintendent of Generation, Heating Engineer and Technical Supervisor. Subsequently, he was a Sales Engineer for the Coxe Stoker Engineering Company for 4 years, followed by 5 years as Mechanical Engineer for the Lehigh Engineering Company. Presently, and for the past one and one-half years, he has served as full time Executive Secretary for the Pennsylvania Society of Professional Engineers. He is a member of the American Society of Mechanical Engineer, the Pennylvania Society of Professional Engineers, the National Society of Professional Engineers, Rotary Club and several Engineering Clubs. Mr. West is a Registered Professional Engineer in Pennsylvania and Delaware.

J. A. Millard, P. E., (Job Analysis #1: The Hospital Engineer—Page 8) is the Chief Engineer of the Charleston General Hospital, Charleston, West Virginia, which has approximately 250 beds. He took up Hospital Engineering four years ago after seeing the urgent need and opportunity for Professional Engineers in hospitals. In 1934 he was graduated from the College of Engineering of West Virginia University with a degree in Electrical Engineering. He was registered as a Professional Engineer on the 18th of June, 1938. At present, Mr. Millard is a member of the West Virginia Society and National Society of Professional Engineers. He is well-known for his many contributions to medical and engineering magazines in an effort to obtain recognition of the need and status of Hospital Engineers.



SCIENCE AND FREEDOM . . .

Is freedom of science just an agreeable tradition, or is it, in fact, necessary for its vigor? If this question be considered honestly, the inexorable conclusion is reached that a free society is necessary to creative science and therefore to technology.

The totalitarian regime in Nazi Germany hardly lasted long enough to demonstrate completely the effect of such a regime on science and technology in general. However, study of the reasons for the failure in Germany to develop the atomic bomb will reveal how party politics, limitation of criticism, exaggerated national conceit, and racial intolerance can strangle even technology.

Some of the things that happened in Germany and are happening in Russia could happen here, and will happen unless we face squarely the troubles in which American science finds itself today and work constantly to keep them within bounds. We are in a dilemma that is not confined to science and technology, but is more acute there than elsewhere. It can be simply stated by the questions: How much should we talk? Or, how much talk should be permitted?

On the whole, the course pursued seems to have been wise. There are extremists on both sides who are dissatisfied and vocal. This is normal and proper in a democracy, and this problem of secrecy is one that needs constant review and debate.

The indirect effects of our secrecy policy are more subtle and, therefore, more dangerous. The extraordinary exaggeration given to the importance of secrecy in the public mind gives cause for concern. We must not accept the false notion that the safety of the country depends on espionage laws, loyalty oaths, and FBI investigations, and that the more of these you have the more secure you make the country's future. Some degree of such measures is necessary in certain areas; but these measures are evil and enervating for they are against the traditions both of science and of the free society in which we live. Let us keep these police measures to a minimum and not allow panic or politics to extend them to areas where they are not needed. Our future strength depends on the strength of our free institutions and free men, even including free scientists.

In science, in technology, and in political action, we must depend not on negative restrictions, but on positive achievement. — *By Henry D. Smyth, Bulletin of the Atomic Scientists*, 1950.

CONSTRUCTION CUTS FOR DEFENSE . . .

The effect that defense preparations will have on next year's volume of construction is still pretty vague. Yet each day that passes adds evidence that the reduction below this year's high level will not be great.

The latest straws in the wind come from Congress where highways, dams and flood control are being measured for appropriations. Substantial cuts are being mentioned in connection with federal road aid, but in most cases these cuts merely apply against previously proposed increases. They are not yet deep enough to suggest less road work next year than this.

Criteria for cutting Reclamation and Army Engineer work have been drawn up, which, if ruthlessly applied, could effect a 20% reduction. But they won't be applied, even as conscientiously as the agencies themselves would do it, because individual Congressmen will bring irresistible pressure to bear in favor of a good many questionable projects. Considering the high priority given to power projects, the reduction in federal river work is not apt to exceed 10%.

What will happen to private and to state and municipal construction is more difficult to estimate. Availability of materials and the level of costs are the prime influencing factors. However, if the military estimates are right, and only 4% of the country's steel capacity is going to be required to fill defense needs, the material situation is not as critical as it was believed. And if costs can hold somewhere near present levels, the feared inflationary deterrent may not develop.

On the basis of present facts and trends, therefore, the construction cuts for defense are not going to be deep. The requirements of the limited mobilization program, it would seem, can be carried by the current economy with a little straining.—*Engineering News-Record, August*, 1950.

PUBLIC WORKS AND PROFESSIONAL ENGINEERS . . .

One of the principal factors in the post-war prosperity is the resulting demand for new houses. Millions of houses have been built in the past four years, and thousands more are under construction. Every house must be connected to water, sewer, electric and gas lines. Streets and school facilities must be provided. Although a large volume of work has been completed, there is much more to be done, and millions of dollars of public funds will be invested in essential public facilities in the months ahead.

Each of the groups represented in the Texas Construction Council has an important part to play in accomplishing this task. The municipal officials, the architect or engineer, and the contractor constitute a team whose joint efforts affect the lives, health and property in the community. This was recognized when the Texas Construction Council was established in 1945.

The key number of this team is the board of public officials who are responsible for selecting an engineer or architect qualified to design the type of work that is to be done. Under the Engineering Registration Act that was approved May 28, 1937, public officials *must* engage a *registered* engineer for *all* public works.

Of course, there are many provisions of the law. I am merely pointing out that, by engaging a registered engineer, the municipal officials have the assurance that such engineer has furnished evidence satisfactory to the State Board of Registration for Professional Engineers that he is qualified to practice in his field of engineering. The law further provides that no person shall be eligible for registration as a professional engineer who

is not of good character and reputation.

Integrity is an essential ingredient in the practice of professional engineering. As in other professions, the preponderant majority of licensed engineers are men of high integrity, but unfortunately, as in other walks of life, not all registered engineers meet the highest standards.

The majority of licensed engineers limit their practice to one or two fields of engineering in which they are qualified, just as there are specialists in the various fields of medicine and law. A professional engineer of integrity will not undertake the design of a public works that is out of his line. Usually, engineers qualified in various fields establish partnerships or enter into associate agreements, in order that they may be in a position to serve their clients in more than one field of engineering.

Municipal officers are elected every two years. They come from all walks of life and many have never had any previous experience in public works. At first, many of them are unfamiliar with the state laws and their own procedures for planning and constructing public works. I am sure many of the newly elected officials would appreciate a simple outline of the steps involved in planning and constructing a municipal project. One of the first steps in such an outline would be the selection of an engineer who is qualified to design and supervise the construction of the specific public works proposed.

Several years ago a certain individual representing a so-called engineering firm solicited and obtained contracts with the County Commissioner's Court of a number of Texas counties. Upon investigation, it was learned that the principal member of the so-called engineering firm was not a licensed engineer, that the plans were unsatisfactory and no services of actual value had been furnished. When this person had collected all the money the counties could raise for engineering services and all he could borrow by assignment of these contracts, he skipped the country. Of course, this experience has made these County Commissioners suspicious of all engineers. Thus, the lack of integrity by one individual who was *not* a registered engineer reflects against the profession as a whole, yet the Commissioners alone were responsible for having selected him. No one else can assume the responsibility for the losses involved as a result of their selection of this individual to furnish the professional services they needed. Certainly, the State Board of Registration for Professional Engineers could not have prevented it, since this man was not registered. How, then, could these Commissioners have avoided embarrassment?

1. Invite several *registered* professional engineers to meet with your Board; talk to each one separately in executive session about your project. Ask them to submit evidence that they are registered engineers. Also, ask for lists of their associates or employees, and for a statement of the background, training, and experience of each.

2. Ask each of them to submit a list of similar projects they have designed and constructed, giving the names of the public officials to whom you may write for reference. Check up on the reference given, or make inquiry of the State Board of Registration for Professional Engineers.

3. Ask each to submit a draft of his proposed agreement describing the services he is in position to furnish. Most licensed engineers use the schedule of fees established by the Texas Society of Professional Engineers. The Society is in position to furnish you with this schedule, also with information regarding the services you are entitled to receive for the fee.

4. Employ the registered engineer who is in position to serve you best; one who has satisfied you that he is qualified to perform the professional services you need, and one in whom you have complete confidence.

The point of this discussion is that the Texas Engineering Registration Act was enacted following the tragic New London disaster, to safeguard life, health and property; the Texas Society of Professional Engineers and the National Society both are working for the advancement of the profession and the public welfare; the Texas Construction Council was organized to serve the best interest of the public; but the benefits of all of them are lost unless municipal officials know about them.

I recommend that the TCC undertake a continuing program to emphasize the fact that the Engineering Registration Act was passed for the protection of the public. Such a program can contribute much to the public welfare if municipal officials thereby are led to appreciate: (1) the *importance* of selecting an engineer to design and supervise the construction of their public works projects, (2) the *advantages* of selecting a registered professional engineer, and (3) the necessity for determining to their own *satisfaction* that he is qualified to design and construct the *specific public work* proposed.—*By W. H. Sindt, Texas Professional Engineer, September,* 1950.

THE CHIEF ENGINEER —HIS STATUS AND RESPONSIBILITIES . . .

In an effort to find out the exact status of chief engineers today in a variety of industries, the following letter was sent out to over 100 chief engineers:

"We do not believe the post of chief engineer is generally accorded the importance it merits. Whereas, the head of the manufacturing department and the heads of the sales and financial departments are usually vice presidents and members of the Board of Directors, this is infrequently the case with the chief engineer. Yet it is felt that the chief engineer performs just as important a function in a company as do the other executives."

"We should appreciate your cooperation in developing a more comprehensive understanding of the position of the chief engineer. Would you tell us: (1) To whom do you report? (2) Are you given the status of an office of your company? (3) What are your duties?"

Even more interesting than the compiled results are the comments and ideas expressed in these replies. Among the overwhelming majority of those who are neither officers or directors, the replies fell roughly into these divisions:

1. Those who wanted to be a vice-president and were somewhat bitter because they weren't.

2. Those who wouldn't touch a vice-president's position with a 10-foot pole.

Great numbers of chief engineers feel that they suffer real inequalities in their nonofficial positions. They say:

"Aside from not having this status of an officer of the corporation, I attend management meetings and other small confidential sessions with directors. Unlike an officer, I receive a straight salary only, without their 'earning clause' which more than doubles their salaries."

Some chief engineers feel that inadequate rating given to the profession may have serious connotations. They see a draining off of engineering talent to sales work, rather than to the improvement of engineering.

One engineer feels that the comparative inferior position of the chief engineer is due to the engineer's over caution and inarticulateness. He says: "All too frequently the professional engineer takes refuge behind the slide rule, and with laudable caution hesitates to express himself on matter unproved to him."

"The net result has been that those

(*Continued on page* 29)

Accent on Activity

NEW ANNUAL REPORT SHOULD REACH YOU WITHIN 2 WEEKS. Read it carefully for it tells the informative and inspiring story of **YOUR** Society for the year 1949-1950. When you have finished with it pass it along to a **PROSPECTIVE member so he may learn just what NSPE DOES.**

WITH THE FALL SEASON COMES NEW, HARD-HITTING MEMBERSHIP CAMPAIGNS. A dozen states are using membership booklet put out by NSPE Hqs. to aid them. Remind your State Secretary to investigate this inexpensive method of contacting potential members. **WRITE: Office Manager, Washington Office.**

PUBLIC RELATIONS COMMITTEE ACTIVE. Chairman C. G. Roush has asked all State Societies to give him resume of their PR activities. Replys are coming in. **REACTION: Most States are REALLY PR-minded and working hard at local level selling NSPE and profession to PUBLIC.**

AS WE GO TO PRESS Board of Directors go to work at two-day session at LITTLE ROCK, ARK. Watch next issue for complete details on confab. **MANY NSPE COMMITTEES WILL MEET AT SAME TIME. EXAMPLE:** Education, Young Engineers, and National Defense groups will adopt policy re: Drafting of Professional Men into Services.

IMPORTANT: For Nominating Committee choices for 1951-52 officers see pages 20-21. NOMINATIONS BY PETITIONS OF MEMBERS must be in Washington office by **DECEMBER 10.**

EXECUTIVE DIRECTOR PAUL H. ROBBINS ON WESTERN SWING. Finds many hard-working Chapters and State Societies doing real job for NSPE. Will render progress report to officials at Little Rock. **TRIP INCLUDED:** Boston, N. Y. C., Chicago, Kansas City, Denver, Seattle, Portland, San Francisco, Sacramento, Reno, Los Angeles, Las Vegas, and then Little Rock.

ROSTER OF ENGINEERING FIRMS now has over 600 names on list. If your firm is not on list write NSPE HQS. WITHOUT DELAY.

BOOKLET ISSUED BY GENERAL SERVICES ADMINISTRATION, "Basic Facts About Selling To The Government," contains much data for those SELLING SUPPLIES TO GOVERNMENT. **WRITE NSPE'S WASHINGTON OFFICE NOW FOR YOUR FREE COPY. Supply is limited.**

ON THE LEGISLATIVE FRONT: Heavy correspondence at Hqs. from members interested in regulations under new DISTRICT OF COLUMBIA REGISTRATION LAW. Members are being advised that D. C. Board **NOT YET APPOINTED.** WATCH AMERICAN ENGINEER FOR ANNOUNCEMENT OF appointment of Board Members along with address of offices . . . **may not be announced for several months . . .** Chairman Clarence Shoch, Head, Legislative Committee thanks all State Societies for assistance in getting D. C. Bill passed . . . **SEVERAL STATE SOCIETIES** working on revision to State Registration Laws and Washington office is aiding them when possible.

AROUND THE CONFERENCE TABLE: NSPE invited to participate in meet on US foreign policy sponsored by State Department . . . Washington Staff members recently met with leading US educators to discuss education in professional field in view of mobilization requirements **(SEE PAGE 5 FOR MORE ON THIS).**

JOE WILLIAMSON, HEAD, CHAPTER ACTIVITIES COMMITTEE, was in Nation's Capital recently to talk changes in Chapter Handbook with Hqs. Staff. **Improvements and additions are coming.**

BOOK LOOKS

Title: The Builders of the Bridge.

Author: D. B. Steinman.

Published by: Harcourt, Brace & Co., New York. Price $5.00.

"The Builders of the Bridge" is a story of two great engineers, John Roebling and his son, Washington Roebling, who constructed the Brooklyn Bridge. This dramatic story, heightened by the fact that it is truth not fiction, is not only the biography of the men themselves, but of the fabulous Bridge as well.

In the beautifully written Preface to this book, Steinman tells of a boy who grew up loving the Bridge, which subsequently filled him with the ambition of being a builder of suspension bridges. "In a background of poverty, this far-flung ambition seemed beyond the boy's reach; but the spirit of the Bridge, and later the story of its builders, had entered his heart—and his dream came true." The boy was D. B. Steinman, who was later to become one of the foremost bridge engineers of our time. In gratitude for that inspiration which he had received from the Bridge and its builders, Steinman devoted five years of his professional life as a master bridge-builder to the writing of this sincere and moving tribute.

The book begins with a description of John Roebling's birth-place in Thuringia and of his temperamentally different parents. Steinman shows how the caution and philosophical restraint of the father and the restless determination of the mother combined in John Roebling to give him a contemplative spirit combined with energy and perseverance. Fired by his mother's resolution for him to be educated, and her sacrifice toward that end, Roebling became an industrious scholar, receiving his "master builder" certificate at the age of fourteen, signifying that he was schooled in the principles and arts of carpentry, masonry and general building construction. After further study at the Royal Polytechnic Institute in Berlin, John Roebling began his professional career at the age of twenty. Upon serving his apprenticeship, Prussian oppression, and stories of a new land filled with opportunity influenced John and his brother Carl to come to America.

Steinman then follows John Roebling through his settlement in America, his marriage, the birth of his son Washington, and his successive engineering accomplishment.

Through Dr. Steinman's eyes, the reader receives a vivid picture of the sacrifices endured by Roebling for his professional idealism. John Roebling's untimely death seems all the more wasted when the reader realizes how exhaustively he had worked toward the fruition of the Bridge, only to die with the dream in sight.

Although its inciting force was gone, the construction of the Bridge went on under the guidance of John Roebling's son, Washington. Possessing many of his father's qualities, and thoroughly acquainted with the work which had been done and was planned, the young man took up the task which was to finally exact from him his career and his health. Colonel Washington Roebling fell victim to caisson disease at the age of thirty-five. From that time on he was to be partially paralyzed, pain-ridden, and with progressive blindness and deafness setting in. From the window of his sick-room, Washington Roebling was to watch the completion and dedication of the Bridge.

Here, then, for layman or professional, is a true version of "The American Success Story" in the finest sense. The courage, sacrifice and high resolution of the Roeblings has been captured in the pages of Dr. Steinman's "The Builders of the Bridge." Failure to read this biography is to rob oneself of a rich literary experience.

Title: The New Image of the Common Man.

Author: Carl J. Friedrich.

Published by: Beacon Perss, Boston, Sept. 1950. Price, $3.75.

In these times of mass-propaganda, the red herring, the weary liberal and the disillusioned reactionary, "The New Image of the Common Man" emerges as a hopeful solace and a valuable literary contribution. Primarily, it is a re-evaluation of man, per se, without any trimmings. Friedrich looks at the common man (and to him the comman man is every man) with an unjaundiced and naked eye. With an objectivity seldom found among social writers, Friedrich explores the various theories on the common man's present and potential position in society, touching on philosophical theories from Aristotle to the present.

Friedrich's main concern in "The New Image of the Common Man" is the difference between the elite, or uncommon, system of government and rule by the common man. In the presentation of elite theories, the author particularly deals with Nietzsche, Marx and Burke. For the belief in the common man, he presents the theories of Paine, Jefferson, Whitman, Lincoln and Kant. Using Lincoln as an example, he cites how a common man can yet be uncommon. "The nearest to an uncommon man recognized by modern America is Abe Lincoln—common man incarnate and self-consciously cognizant of that fact . . . Lincoln, then, was uncommon only in the extent to which he embodies the traits which the belief in the common man called for."

The author also stresses that both the man-always-good and man-always-bad theories are mistaken due to their generalizations. Rather, he believes that "the common man is trustworthy because he is, in the aggregate, a man of *character* rather than of intellect . . . consistent and averse to high-falutin' deviations. He is safer than the uncommon man."

Freidrich's concluding chapter is titled "Pan-Humanism" and in this portion of the book he stresses the need for men of various nations to recognize their common ethical aspirations. However, the author believes that the American common man has little or no idea of what the basic beliefs, values, and standards of the majority of mankind are. He is indifferent to the extension of the Four Freedoms to all world citizens. This the author feels to be detrimental to the best interests of the "new world" which we are trying to achieve.

As an informed Professional Engineer and an Intelligent American, you owe it to yourself to understand the many facets of the problem of a ruling elite or uncommon system versus the common or democratic, which is one of the basic issues in the Russo-American situation today, and a reading of "The New Image of The Common Man" will help to furnish this insight.

CORRECTION

Through a typographical error, the price of STATISTICS AND STRENGTH OF MATERIALS by Jasper O. Draffina and W. Leighton Collins was given as $.50 in the October issue of the AMERICAN ENGINEER. The correct price of this book, published by The Ronald Press Company, New York, is $6.50.

TO THE *Editor* . . .

Inspiration . . .

Dear Editor:

When I finish reading my copy of THE AMERICAN ENGINEER I pass it around to the men in my Department.

Through your publication we have learned a great deal about our occupational profession. Your articles have made such an impression that three men took the last State examination, and several will enroll for the next refresher course. For this reason I feel that it is my duty and pleasure to convey to you an expression of appreciation for your good work.

A continuation of your eloquence will be justified by its results.

LOUIS KORMENDY, P.E.,
Detroit 21, Mich.

Dear Editor:

I like your magazine very much—especially the news of local chapters. The article by Mr. B. M. Aldrich "The Conservation of Man" was especially good.

BAZIL E. CROME, P.E.,
Champaign, Ill.

Steinman Editorial . . .

Dear Editor:

It is lése majesté, heresy and high treason to disagree with Dr. D. B. Steinman in the pages of THE AMERICAN ENGINEER, but at least one of his "cold facts" as quoted in your August editorial: "Bringing Dreams Out into the Daylight" is a glaring half truth. Few will disagree with Dr. Steinman in his assertion that the engineering profession is arduous, with material rewards quite incommensurate with accomplishments, but I do take exception to the statement that since only fifty-five per cent of living engineers remain in engineering, this represents "a tragic waste of economic and human values."

The question which Dr. Steinman fails to answer is: What becomes of the remaining forty-five per cent? In June 1930, sixty-eight men received the degree of Mechanical Engineer from Stevens Institute of Technology. This class was in no way unusual—nothing distinguished it from its predecessors or its successors. It is selected merely because the statistics were readily available to me. Today, thirty-six or fifty-three per cent of those men are in the engineering profession. This is in very close agreement with the fifty-five per cent mentioned above. But of the remaining "non-engineers," eleven are partners or officers in nationally prominent consulting firms or corporations, three are substantial small business owners, two are physicians, one of these being an internationally noted eye surgeon, two are professors of engineering and another teaches in an engineering preparatory school, three are officers in the armed forces, one is a lawyer, and one a clergyman. The remainder are in sales, textiles and insurance.

This is concrete evidence of the fact that a sound training in engineering fundamentals is a valuable asset in any field. One of the aforementioned physicians upon accepting a medal for outstanding work in ophthalmology said that his engineering course was the best pre-medical training he could have had. In the same August issue of THE AMERICAN ENGINEER, J. Henry Rushton decries the fact that the engineering viewpoint is so little understood by members of other fields and professions. What better way to broaden this understanding than through the forty-five per cent who supposedly fell by the wayside?

It is to be noted that the majority of these men did not turn to other fields because they could not succeed in engineering, but rather that they came up through the engineering departments to positions of greater responsibility and wider service. Doctors, lawyers, executives, educators, clergymen. A "tragic waste of human values"? Let us have more such waste!

GEORGE P. RETTIG, P. E.,
Hoboken, New Jersey

Miss 1950 . . .

Dear Editor:

. . . the following poem, "Miss 1950" may not win the Pulitzer Prize but is quite a tribute to the engineer. It's from the Philadelphia *Bulletin:*

She's strapless for evening, for daytime, for beach.
And yet, sans its straps, her top sticks like a leech.
Don't credit her shoulders, her front so sublime,
Adhesives, or thumb-tacks—it's science THIS time.

. The lads in the labs have abandoned Old Tech
And girders and tunnels and the roll of a deck
To take to some draughting that's more fun than bridges:
They've cantilevered all of Milady's cute ridges.

So all hail the strapless, the best news in years,
Come straight from the space 'tween the engineers' ears.
She'll dance or she'll swim or she'll run a fast lap,
Quite strapless, quite poised—and without a mishap.

—Frances Harrington

JOHN C. CARR, P.E.,
Reading, Pa.

Definition of Terms . . .

Dear Editor:

Enclosed is my reaction to the article which appeared in the September issue under the title "Is Engineering a Profession?"

Engineering is not a Profession.

Engineering will not be a profession as long as a steam fitter can call himself a heating engineer, a radio mechanic an electrical engineer, a boiler tender a stationary engineer, or a locomotive driver an "engineer." A college graduate with an engineering degree is also called an engineer.

The fault lies in the meaning of "engineer." The original meaning was "one who manages or runs any stationary or locomotive engine." In its modern meaning and extended sense it includes the college graduate engineer.

When we speak of a doctor we mean a person who is a college graduate of a medical school and who has received official state permission to practice medicine. The same is true of lawyers, dentists, architects and other professions.

The present accepted meaning of

(*Continued on page* 31)

Committee Nominates Officers for '51

A PROMINENT Westerner, well-known in NSPE activities, has been named by the NSPE Nominating Committee to head the organization for the administrative year starting July 1, 1951. He is L. L. Dresser, Vice President of the Southwestern Area, Chairman, Annual Awards Committee and previously active in many official Society offices.

Simultaneously, the Nominating Committee announced its candidates for the other National Officers of the organization.

In announcing its choices for the NSPE posts, the Nominating Committee pointed out that additional nominations may be made by the members, as provided in the Constitution. This provision states that additional names shall be placed on the official ballot upon petition of fifty members, all of whom must be in good standing, provided such petition is received at least one week prior to the printing of the official ballot. The closing date for such petitions will be December 10, 1950. They should be sent to the Washington office, NSPE.

This year's nominating committee includes: Engineers Charles E. Blais, Chairman, Harry C. Robert, Robert E. Allen, Trigg Twichell and John B. Jardine.

Pictured below are the Nominating Committee's choices for Society leadership.

LAURENCE L. DRESSER, who has been nominated for the NSPE presidency, was born in Litchfield, Michigan, August 4, 1895. In 1916 he joined the United States Steel Corporation, Chicago, as a draftsman, later working in both Birmingham and Mobile. As assistant chief draftsman in 1921, he resigned to enter Tri-State College of Engineering, Angola, Indiana, and was graduated with a B.S. in Civil Engineering in 1923. Continuing his profession, 1924 found him in Tulsa as a structural engineer. The formation of Dresser Engineering Company with him as president is listed in 1926. Since that time he has specialized in the design and construction of petroleum and gas processing plants. He is registered as a professional engineer in Oklahoma, Texas, Kansas, and Arkansas.

L. L. Dresser

Dresser was president of the Oklahoma Society in 1947, and is now vice-president of the NSPE, Southwestern Area, and chairman of the Awards Committee. He is director of OSPE, member Committee on Conservation of Natural Resources, past vice-president of Tulsa Engineer's Club, honorary member Sigma Chapter (Oklahoma A. and M.) Sigma Tau, and member Dallas Chapter, Texas SPE. He is serving on Aviation, Industrial Building and Sites, and Program of Work committees of Tulsa Chamber of Commerce, and is a member of the Tulsa County Master Plan Committee. He is also a member of the Technical Club, Governor Turner's Citizens Advisory Committee, and president of the Natural Gasoline Supply Men's Association.

He is chairman City and County Airport Zoning Board, member Oklahoma Aviation Association, Quiet Birdmen, Oklahoma and National Flying Farmers. Dresser's civic activities include; honorary member Lion's club, member Tulsa Club, Indiana Consistory and Akdar Shrine, and the First United Presbyterian Church.

George J. Nicastro

GEORGE J. NICASTRO, who was born in North Bergen, New Jersey, in 1902, is a nominee for Vice President of the Northeastern Area. He was graduated from Stevens Institute of Technology in 1925 as a Mechanical Engineer and studied further at Alexander Hamilton Institute in Business Administration.

Upon graduation he worked as an engineer for the American Can Company in Brooklyn, New York, the Power Specialty Company, and the Edge Moor Iron Company of Delaware. Since 1934 he has been associated with the New York Office of the Combustion Engineering—Superheater, Inc.

He is a Director and member of the Executive Committee of the Stevens Alumni Association, President of the Stevens Metropolitan Club, a member of ASME, and has served on many local and national committees of the latter organization.

Nicastro has served as President of the New York Chapter for four terms and is Immediate Past President of the New York State Society. At present he is a National Director for the NYSSPE and Chairman of the National Society Publications Committee.

JOHN F. REYNOLDS, nominee for Vice President of the Southeastern Area, was born in Auburn, Iowa, in 1885. He was graduated with a B.S. degree in Civil Engineering from Iowa State College in 1908. After working on various engineering jobs, including Structural Design work in Salt Lake City, Utah and Youngstown, Ohio, Reynolds served as a First Lieutenant and Captain with the 504 Engineers, A. E. F. from 1917 to 1919, including 19 months in France. In 1919 he became District Engineer for the Iowa Highway Commission, and from 1924 to 1926 he served as Superintendent of Construction, Highways and Bridges, Iowa and Florida. He was a member of Hillyer & Reynolds from 1926 until 1935, and a consulting engineer in Jacksonville from 1935 to 1941, at which time he joined the firm of Reynolds, Smith & Hills, architects and engineers, in Jacksonville. He is a member of Tau Beta Pi, American Society of Civil Engineers, National Society of Professional Engineers, and the Society of American Military Engineers. He is a fellow member of the Florida Engineering Society and is registered as a professional engineer in Florida, Georgia and Iowa.

John F. Reynolds

Chester Lichtenberg

COLONEL CHESTER LICHTENBERG, who has received the nomination for Vice President of the Central Area, was graduated from Columbia University, New York City, with the degree of Electrical Engineer in 1906. Following graduation he served as Assistant to Professor Michael I. Pupin in the Department of Electro-Mechanics for one year. He then joined General Electric Company as a Student Engineer and remained with that organization until his retirement for age. His military service started with a commission as a 2nd Lieutenant, Corps of Engineers, Reserve under the National Defense Act of 1916. He was promoted through the grades, being appointed a Colonel in 1933. He served in World War I as a member of the staff of the Chief of Engineers, U. S. Army, and during World War II as an Expert Consultant to the Chief of Engineers, U. S. Army. Between the two wars he was active in the organization of Engineer Procurement Districts in Buffalo, New York; Philadelphia, Pennsylvania; and Chicago, Illinois. He was retired upon reaching statutory age.

Currently he is Civil Defense Director of Fort Wayne and Allen County, Indiana, Vice President of the Indiana Engineering Council, Past President and National Director of the Indiana Society of Professional Engineers, President of the Department of Indiana and member of the Constitution and Bylaws Committee of the Reserve Officers Association of the United States. In addition, Lichtenberg is Chairman of the Young Engineers Committee of the National Society of Professional Engineers.

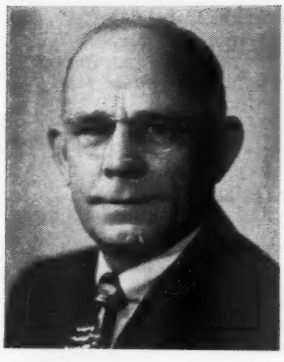
C. G. Roush

C. G. ROUSH, who has been nominated for a second term as Vice President, Northcentral Area, was born in Mason County, West Virginia, in 1901. He was graduated from Oklahoma University in 1923 with a B.S. in Electrical Engineering. He is a member and past national officer of Sigma Tau, honorary engineering fraternity.

Roush first went to work for Westinghouse Electric in Pittsburgh. He held several sales engineering assignments around Kansas City from 1925 through 1936. From 1937 until the present, he has been Kansas City manager.

He served as President of the Missouri Society for two years and as President of the Western Chapter. He was active in helping get the Missouri Registration Law, and while President of the Society, he helped set up the Engineers-in-Training Program in the three Engineering Schools in Missouri. At present he is serving as Public Relations Chairman for N. S. P. E.

Roush is a past president of the Kansas City Engineers Club, the Kansas City Electric Association, the Exchange Club, and Chairman of the Kansas City Section, AIEE. He is a member of the Kansas City Club, and the Chamber of Commerce of Kansas City, Missouri and Kansas City, Kansas. He is also active in such civic activities as the Community Chest, the Red Cross, and the YMCA.



Thomas C. Forrest, Jr.

THOMAS CARR FORREST, JR., nominated for Vice-Presidency of the Southwestern Area, was born at Forreston, Texas in 1896. He attended Trinity University and A & M College of Texas. Forrest has been engaged in private practice continuously since 1922, including such work as flood control and water conservation projects, industrial districts and many national defense projects during World War II. For the past 4 years he has been National Director of the Texas Society and is a Past President of the Dallas Technical Club. In addition, he is a Past Vice President of the Texas Section of ASCE and a Director of the Association of Former Students, A & M College of Texas. He is a member of the American Institute of Consulting Engineers, Society of American Military Engineers. American Waterworks Association and Tau Beta Pi.

DeWitt C. Griffin

DEWITT C. GRIFFIN, born in Omaha, Nebraska in 1902. has been nominated for Vice-President of the Western Area. He attended high school in Spokane and Seattle, Washington and was a student of the University of Washington, where he was a member of Zeta Psi fraternity. He has been registered as a mechanical engineer in the State of Washington since 1936, and has operated his own engineering office since that time. In the past he has served as Secretary and President of the Pacific Northwest Chapter of the American Society of Heating and Ventilating Engineers. He has served as president and secretary of the Seattle Chapter, WSPE and as president of the Washington Society of Professional Engineers. At present he is a member of the Ethical Practices Committee of N. S. P. E., and also of the Seattle Chapter of the Washington Society. In addition, he holds membership in the Seattle Chamber of Commerce, the Municipal League, the Seattle Rotary Club. Rainier Club and the Washington Club. He is a member of Trinity Methodist Church, chairman of the House Committee, and on the Official Board and Board of Trustees.

Russell B. Allen

RUSSELL B. ALLEN has been named for a fourth time to serve as Treasurer. Raised in New Haven, Connecticut, Allen received his B. S. in Civil Engineering from Yale in 1923. His association with the University of Maryland began in 1933. In 1945 he was given the title of full professor.

Registered both in Maryland and Connecticut, Allen has been active in the affairs of the Maryland Society, was Secretary - Treasurer from 1938 to 1940, President from 1941 to 1943 and a National Director of NSPE for a number of years.

Around The Nation With Our Members

Missouri Society Holds Convention In Kansas City

The Missouri Society met for its fourteenth annual convention on October 26, 27 and 28 at the President Hotel in Kansas City, Missouri.

The opening day of the convention was taken up with registration and State Committee and Missouri Society Board meetings. At the Friday morning meeting, the Society heard an address "Free Professions In A Free Society" by Dr. W. A. Bloom, president, Missouri State Medical Association, followed later in the meeting by a speech by Lt. Col. L. J. Lincoln, District Engineer, Corps of Engineers, U. S. Army, "The Engineer—A Modern Giant Upon The Earth." The morning meeting concluded with a panel discussion "Municipal Problems and Professional Engineers."

Mr. Alex Van Praag, Jr., past president, NSPE, then addressed the Presidents' Luncheon on "Unity of the Engineering Profession." The Annual Business Meeting concluded the day's meetings.

The morning session of the final day of the convention featured three addresses by prominent speakers. Mr. S. L. Stolte, President, NSPE gave the opening address "Our Time of Decision," followed by Mr. Walter Raymond, Vice-President, Missouri Bar Association, who spoke on "The Engineer and the Lawyer." Mr. Hubert Wheeler, Commissioner, Department of Education, State of Missouri, gave the final speech for the morning, and his topic was "Progress and Problems in Education in Missouri."

Senator Harry Darby, United States Senate, addressed the E. I. T. Luncheon on the subject "Opportunities For the E. I. T." Panel discussions on various subjects were held throughout the afternoon, and the convention ended with the Annual Banquet held at the Hotel Continental. Dr. Frank L. Eversull, Professor of Education, Washington University, was the guest speaker, and addressed the Society of "Social Responsibilities Of the Engineer For Our New Ideology."

HEADS DRIVE

Albert J. Nesbitt, P.E.

Nesbitt Selected To Head Community Chest Drive In Philadelphia

Albert J. Nesbitt, P.E., president of John J. Nesbitt, Inc., and long prominent in the civic and business life of Philadelphia, has been selected as general chairman of the 1951 Community Chest campaign. He has served previously as Industry and Finance group, section and division chairman, and is on the board of the national organization, Community Chest and Councils of America, Inc.

Mr. Nesbitt has served prominently as General Chairman in the preparations for this year's United Fund drive which is shared by the Community Chest, Philadelphia Heart Society, Red Cross and Salvation Army. Later, he will proceed to coordinate the efforts of the Community Chest organization in conducting the first of the four separate campaigns to follow the United Fund appeal. Nesbitt is a member of the Philadelphia Chapter of the Pennsylvania Society.

Texas Society Plans For 1950-51 High School Essay Contest

The Texas Society is making preparations to hold an Essay Contest on "Engineering As A Profession" during 1950-51. The Education Committee of TSPE and its Chairman, Dean W. R. Woolrich are promoting the contest.

The competition will be opened to all Junior and Senior High School students residing in the State of Texas and there will be five cash awards ranging from $5.00 to $50.00 for the five top essays. Certificates of Merit will be given to not more than two essayists from each school participating, whether they place in the State Awards or not.

The Chapters throughout the State have been requested to set up cash awards for the winners in their respective areas. In this way there will be still another chance for entries to win cash awards from the Chapter level as well as from the State level. These four cash awards will range from $5.00 to $35.00.

The contest begins on October 15, 1950, and the participating students shall present their papers to their high school judges by March 1st, 1951. The winning papers of each high school shall be in the hands of the Chapter judges by March 15th, 1951 and the winning papers from each Chapter will be in the hands of the Education Committee by April 15th, 1951. The essay shall be not under 600 nor over 2,000 words in length.

The sub-committee of the Education Committee which will promote the Essay Contest are Professor M. C. Hughes, Mr. F. H. Berleth, and Professor W. L. Ducker. The contest has been assured for each of four years by member sponsors Mr. Marvin C. Nichols, Mr. T. C. Forrest, Jr., Oscar H. Koch and John D. Miller. They have provided the prize money and incidental state office overhead for the contest. The financial sponsor for the four years will be an ex-officio member of the sub-committee, and Mr. John Miller has been named for 1950-51.

M. I. T. To Receive New Laboratory For Metal Processing

Construction of the Sloan Metal Processing Laboratory, designed to house a pioneering program of education and research in metallurgical sciene as applied to basic manufacturing processes, was recently begun at the Massachusetts Institute of Technology. The new building, provided by a gift of $1,000,000 from Alfred P. Sloan, Jr., chairman of the board of General Motors Corporation, is scheduled for completion in the fall of 1951.

The new building will provide the first adequate housing for the metal processing program at the Institute, which was inaugurated in 1946 under the direction of Dr. John Wulff, professor of metallurgy, and is administered jointly by the departments of metallurgy, mechanical engineering, and business and engineering administration.

Albany County Chapter Of New York State SPE Holds Fall Meeting

The Albany County Chapter of the New York State SPE held its first fall meeting on October 17 at Panetta's Restaurant in Menands, New York. The subject of the meeting was the New York State Thruway.

Mr. Bertram D. Tallamy, P.E., Chairman of the New York State Thruway Authority, presented a colorful description of the Thruway Project, for commercial, public and military uses. He described the terrain and the difficult construction expected in order to insure a highway having safe and rapid transportation across New York State.

Mr. Tallamy is a member of the Erie County Chapter of the New York State Society and is now Superintendent of Public Works for the State of New York.

In addition to Mr. Tallamy's address, an informal discussion was given by Mr. Stanley T. Barker, Assistant Director of the Bureau of Environmental Sanitation, New York State Department of Health, on the nuclear theory and life of radiation in materials. This discussion was in preparation for a better understanding of the talk which Mr. Barker will give at the November meeting of the Albany Chapter on the subject "Personnel and Materials Affected by the Atomic Bomb."

Gal E.I.T. . . .

Miss Alice Joe, E.I.T.

A Man's World? . . . Ask E. I. T. Alice Joe Of Arkansas Society

At a recent meeting of the Arkansas Society in Little Rock, a certificate of Engineer-in-Training was presented to Miss Alice Joe, the first Arkansas woman to seek registration.

Only twenty-two years old, Miss Alice Joe was the only woman in her 1950 graduating class from the University of Arkansas College of Engineering. Having already passed an examination by the Arkansas State Board of Registration for Professional Engineers for Engineer-in-Training, Miss Joe will take another exam, in a minimum of two years, this time based on actual experience. Upon passing this test, she will become fully registered with the Board as a licensed, Professional Engineer, and a full-fledged member of the Society.

Miss Joe, a civil engineer with the Arkansas Highway Department, at present spends long hours at her drafting table (cut down to fit her five feet and one inch) working on an important phase in the State's extensive road and bridge program. However, she says her great ambition is to some day cross a bridge that has been transformed to reality from her drawing board.

Explaining why she chose her field, she said that a strong sense of competition was awakened when she was a childhood tomboy, and this, coupled with a deep fascination for mathematics, helped make up her mind to enter the field of engineering.

Eventually, Miss Joe hopes to spend some time in China gaining additional construction experience, and then to return to this country and organize a private consulting engineering firm.

Radio Program Series Presented By Dayton Chapter, Ohio Society

Station WING, Dayton, Ohio, in co-operation with the Dayton Society of Professional Engineers, is presenting a series of fifteen radio programs to be heard each Saturday afternoon at 5:15 from September 23 through December 30. Included in the programming will be three panel discussions, "The Engineer and the Community," "The Engineer and Education" and "The Engineer and Public Safety." The other twelve programs will tell of the engineer's relations to the Electrical Industry, the Steel Industry, The Rubber Industry, Railroads, Canals, Petroleum Industry, Water Resources, Glass Industry, Natural Gas, Farm Machinery, Highways, and the Aluminum Industry.

All programs except the panel discussions have been prepared by the Ohio Society of Professional Engineers.

Hudson County Chapter Plays Host To Joint Meeting In New Jersey

The Kings County Chapter of the New York SPE and the Brooklyn Engineers Club met with the Hudson County Chapter of the New Jersey Society at Hoboken on October 2. This is believed to be the first time that a Chapter of one State Society has been entertained by a Chapter of another State Society.

After the meeting the guests from Kings County and Brooklyn were conducted on a guided tour of the Hoboken plant of the United States Testing Company. There they were greeted by Mr. H. M. Block, Vice President, and by William Furber Smith, who is manager of Engineering Inspection.

While the tour was being conducted for the Brooklyn and King County Chapters, Dr. John C. Riedel addressed the Hudson County group during the second half of their meeting. Dr. Riedel is Chairman of the New York Traffic Commission, Chief Engineer of the Board of Estimate, and a member of the New York City Planning Commission. He has served as president of the Kings County Chapter, of the New York State Society of Professional Engineers and of the National Society of Professional Engineers.

Scenes from Wisconsin summer conference, held September 8 and 9 at Wisconsin Rapids, Wisconsin. TOP PICTURE: View of main banquet and the speaker of the evening—Dr. J. Martin Klolsche. MIDDLE: left to right, R. C. Clark, Vice President, WSPE; H. Moore, Past President, WSPE; S. L. Stolte, President, NSPE; R. L. Hungerford, Director, WSPE; L. M. Schindler, Treasurer, WSPE; W. S. Cottingham, Director, WSPE; George W. Martin, Alternate National Representative, WSPE; C. A. Cajanus, Director, WSPE. BOTTOM: G. E. Ekblaw, President, ISPE, addressing the noon luncheon. Seated in the background, left to right, H. Moore, Past President, WSPE; Ed Kallevang, President, WSPE; R. C. Clark, presiding officer, and S. L. Stolte, President, NSPE.

Wisconsin Society Meets For Fourth Summer Conference

The fourth summer conference of the Wisconsin Society was held at the Elk's Club at Wisconsin Rapids, Wisconsin, September 8 and 9, 1950. The meeting started at 7:00 with a meeting of the Board of Directors. At 8:30 there was a reception with refreshments and a buffet luncheon.

Registration began at 8 on Saturday morning, followed at 8:30 by a movie given by the U. S. Department of Agriculture, "Forests Forever." This picture showed plans underway and future plans for the conservation of the forests and the proper procedure so that we may continue to have timber in the future.

Following the picture, Mr. E. J. Kallevang, WSPE president, delivered the opening address. After welcoming the members, he discussed the latest organizational chart of the Society and explained the reason and purpose of several of the groups. He then introduced S. L. Stolte, president of NSPE, who spoke on "A Challenge for Service."

Following Mr. Stolte's talk, a business meeting was held and committee reports were given. After committee reports, the meeting broke up into four newly-formed functional groups. President Kellevang appointed the following temporary chairmen: William Urban, Industrial group; Professor Higgins, Educational group; Joseph Lustig, Public Employee group; and Robert Connelly, Consulting Engineers.

At the afternoon meeting, which was preceded by a luncheon, George E. Ekblaw, president, Illinois Society, spoke on "Organization and Activities of the Illinois Society of Professional Engineers." The afternoon session was completed by a tour of the Peterwell and Castle Rock Projects of the Wisconsin River Power Co.

The meeting concluded Saturday night with the customary Engineers' Banquet with Robert M. Connelly as Master of Ceremonies and S. L. Stolte, President, NSPE, E. J. Kallevang, President, WSPE, and Professor Ben G. Elliott, University of Wisconsin, Madison, furnishing the entertainment. The speaker of the evening was Dr. J. Martin Klotsche, President of the Milwaukee State Teachers College and a student of world affairs.

Southwest Chapter Of MSPE Hears Talk By Swedish Engineers

E. G. Almquist, civil engineer, and A. Johnson, both engineers for the Royal Board of Roads and Waterways in Sweden, were guests of the Southwest Chapter of the Minnesota Society at a meeting held recently in Redwood Falls, Minnesota.

Mr. Almquist and Mr. Johnson are spending three months in the United States studying highway engineering practices of the various state highway departments.

Midwestern Chapter Of PSPE Holds Fall Meeting In Franklin

The Midwestern Chapter of Pennsylvania SPE held its October meeting at the Exchange Hotel in Franklin, Pennsylvania recently. The meeting, which was entirely arranged by the Engineer-in-Training committee, included two sound films which dealt with highway maintenance, construction, and replacement problems. In addition, Vice President, George Emery, introduced the program and conducted a question and answer period after the showing of the movie.

The November meeting is planned for Butler, Pennsylvania and will include an address "Interesting Highlights on Korea" by an eye-witness.

Seated at the Speakers' Table, West Virginia Society of Professional Engineers' convention, The Greenbrier, White Sulphur Springs, West Virginia, September 2: Reading from left to right: Honorable Okey L. Patteson, Governor of West Virginia; Robert Williamson, Jr., President of the West Virginia SPE; Mrs. Patteson; Sidney L. Stolte, President, NSPE; Harry G. Kennedy, West Virginia's NSPE Director; Leslie C. Gates, Vice President, West Virginia Society; John J. Knight and Junius T. Moore, members of the West Virginia Registration Board for Professional Engineers; Leo Vecellio, President of the West Virginia Contractors' Association.

Speeches By Patteson And Stolte Highlight West Virginia Meeting

The seventeenth annual convention of the West Virginia Society, held at the Greenbrier, White Sulphur Springs, ended its two-day session Saturday afternoon, September 2. A stirring address by Governor Okey L. Patteson at the Society's Saturday luncheon, and a speech by NSPE President S. L. Stolte, P.E., at the Saturday morning business session were features.

Many of the engineers and their ladies attended the meetings of the State Chamber of Commerce, and the West Virginia Contractors' Association, which were integrated with the Society's program over the same week-end. Similarly, the Society's sessions had many visitors from the other two groups.

With the Greenbrier and Cottages as the background, the social aspect of the convention was dominant. The engineers and their ladies were invited to the Chamber of Commerce luncheon and banquet on Friday and to the banquet and special entertainment provided by the West Virginia Contractors' Association on Saturday. A buffet luncheon on Friday at the Casino was provided for ladies who did not attend the Chamber of Commerce luncheon. Membership in the Greenbrier's refreshment center, the Old White Club, was provided for all engineers and their ladies. Golf was offered on three fine courses.

LEFEBER SPEAKS TO MIAMI VALLEY GROUP

Alfred LeFeber, Cincinnati consulting engineer addressing dinner meeting of the Miami Valley Chapter, OSPE, held at Hamilton, Ohio, on October 1.

Ohio's Miami Valley Chapter Warned Of Possible Water Loss

The delay in developing the South Well field water system for use by Hamilton, Ohio consumers could result in the city losing this valuable source of water supply, according to Alfred LeFeber, Cincinnati consulting engineer, who was the principal speaker at a dinner meeting of the Miami Valley chapter of the Ohio Society held in Hamilton on October 1.

Mr. LeFeber said that the Federal Government's buying of the water system would be a "real disaster" as he said there is no other place for Hamilton to obtain water. "I can't conceive that anyone would be stupid enough to say we don't need or don't want the South Well field water supply," LeFeber added.

LeFeber stated that the proposal of the committee, sponsoring the referendum against an increase in water rates, to enlarge the present municipal water plant and extend mains southward would cost the people of Hamilton $1,635,000 more than the city's plan to develop the South Well field and tie it in with the present water supply.

Before LeFeber's address, the chapter conducted a brief session, presided over by E. L. Brown, chapter president.

Movie On The Story Of Iron Available Now Free Of Charge

The first motion picture telling the story of malleable iron, "This Moving World," sponsored by the Malleable Founders' Society, is available free of charge from Association Films, Inc. The three-reel 16mm Technicolor film shows how the metal is made, tested and used. Edwin C. Hill, popular radio commentator, is the narrator.

The film may be borrowed from any one of the following Association Films exchanges: New York—35 W. 45th Street; Chicago—206 So. Michigan Avenue; San Francisco—351 Turk Street; and Dallas—1915 Live Oak Street.

Milwaukee Chapter Hears Talk On Labor-Management Problems

The matter of organization of engineers as a professional as well as a labor group, was the timely subject of the last regular meeting of the Milwaukee Chapter of WSPE, held on October 10 at the ESM Building in Milwaukee.

Professor Don Lescohier, head of the Economics Department of the University of Wisconsin, addressed the group on this controversial subject. Lescohier is widely known for his long activity and interest in Labor-Management relationships.

Members of other engineering societies were cordially invited to hear this address, which was followed by an open discussion period.

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"Faint Heart Ne'er Won" . . . Show This To The Girl-Friend!

Girls looking for a husband are advised to investigate the possibilities of the engineering profession.

Dr. James Bender, director of the National Institute for Human Relations told a Carnegie Hall convocation that "engineers have the best hearts for marriage." He warned, however, that most of them are a bit shy and might need some prodding.

He cited six factors which make them the ideal prospect:

1. They apply logic to morals, economics, science, and job loyalty.
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3. They're home bodies who like to putter around the house.
4. They're "tender lovers" and good parents who like large families.
5. They're the least neurotic of all vocational groups and rarely quarrel.
6. They're religious and good church attenders.

Exams Announced For 1951 Scholarships By Carnegie Tech

Carnegie Institute of Technology has announced that examinations for ten Westinghouse scholarships, worth a total of $28,500, will be given on March 10, 1951. Examinations for the scholarships will be given by the College Entrance Examination Board in all parts of the nation.

The awards, worth $2,850 each, cover four years' tuition and include cash grants in the freshman and sophomore years. Each year ten of these scholarships are given to highest ranking secondary school senior men for study at Carnegie in engineering, science or industrial management.

The competition is open to men who graduate in the upper quarter of their class between January and September 1951. Students who want to try for the Westinghouse scholarships must write Carnegie's Chairman of Admissions in Pittsburgh for application forms before December 1, 1950.

Engineer Carville Elected To Political Post In Lima, Ohio

Mr. T. E. M. Carville, P.E., was recently elected by the City Council of Lima, Ohio to fill the fourth ward vacancy. He was sworn in immediately afterwards and participated in the last half of the meeting.

Carville, manager of the industrial engineering department of the Westinghouse Electric Corp. of Lima, holds a bachelor of science degree in electrical engineering from the University of Maine, and belongs to the National Society, American Institute of Electrical Engineers and the Ohio Society of Professional Engineers. He is presently serving as president of the Maumee Valley chapter of the latter organization.

District Of Columbia Society Holds First Meeting Of Season

The District of Columbia Society held its first meeting of the new season recently in the auditorium of the Potomac Electric Power Company in Washington. The majority of the meeting was devoted to business and discussion. In addition, there was an eighteen-minute movie, a color picture produced by the Forestry Service and called "Every Man's Empire." Presiding were the new officers of the Society: President, Henry W. Clark, P.E.; 1st Vice President, Joseph H. Powers, P.E.; 2nd Vice President, Paul S. Dell 'Aria, P.E.; and Secretary-Treasurer, C. J. Colbert, P.E.

Tell Us About YOUR Group!

Is your Chapter or Society getting adequate coverage in the AMERICAN ENGINEER? If not, please remember that our staff is not psychic . . . WE HAVE TO HEAR FROM YOU IN ORDER TO WRITE IT UP! Get behind your officers and remind them to get the news into us, or if you see something you think might be of interest, just send it in. Be sure and tell us who, what, when and where, and remember to include *full* names. Photographs will also be useful, if properly captioned. How about it? Instead of just a few groups getting all the publicity, let's see *your* Chapter or Society in print next issue.

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Plastics Engineers To Hold Technical Meeting In New York

The Society of Plastics Engineers, Inc., will hold its Seventh Annual National Technical Conference on January 18 to 20, 1951 at the Hotel Statler, New York, New York.

The theme of the Conference is "Plastics Shape the Future," and the technical papers to be presented will review achievements in plastics during the past 50 years, and forecast the course of future developments during the next half-century. An integrated program of papers is planned to cover plastic materials, machinery, processing methods, and applications.

In addition to technical sessions, the Conference program will include luncheon and banquet meetings, the Society's annual business meeting, the election of national officers for the coming year, and the presentation of awards to winners in the Society's Prize Paper Contest.

Open to all persons in the plastics and related industries, the Conference is expected to attract an attendance of 1,000 technologists from all parts of the United States, Canada, Mexico, and many foreign countries. A special program for the ladies is being arranged, including tours, fashion shows, and radio and television shows.

Arkansas SPE Adopts Form For Unethical Practices Inquiries

In order to expedite the work of the Ethics and Practice Committee in investigating complaints of violation of the law governing the practice of Professional Engineering, the Board of Directors of the Arkansas Society has adopted a form to be used in submitting complaints.

The plan works in this manner: Each member of the Society is supplied with copies of Form 10. If a member believes that the law has been violated, he fills out the form and forwards it to the Society. In addition, the member agrees to assist in prosecution of the case if necessary. The complaint is then investigated by the Ethics and Practice Committee who reports its findings and recommendations to the Board of Directors.

The use of this form has been very successful and the Arkansas Society feels that it may be of interest to other Societies. Since its adoption, several serious violations of the Registration Law have been uncovered and settled peaceably. Due to the diplomatic manner in which the Ethics and Practice Committee has investigated the cases, no litigation has resulted. In fact, considerable interest has been created in complying with the Registration Law, and several applications for registration have resulted.

Pennsylvania Society Active In Chapter Organization Efforts

Recently, the Pennsylvania Society of Professional Engineers has been quite active in trying to organize new Chapters. In October alone, meetings were held for interested engineers in three counties: Lebanon, Washington, and Chester.

On October 19, a dinner meeting was held at the Auld Hotel in Washington, Pennsylvania to discuss the advisability of organizing a Washington County Chapter. After dinner short talks were given outlining the aims and accomplishments of the Society and the meeting was then open for questions and discussion.

Chester County Engineers and Surveyors were invited to a dinner meeting held at Exton Lodge on October 17. Groundwork had already been laid for this chapter at a September meeting, at which time temporary officers were elected and a great deal of interest shown.

The home of Richard L. Davis was the meeting place for prospective NSPE members from Lebanon County, on October 9. The dinner was followed by a general discussion period in which the opinions of all present were sought.

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News To Note

Pennsylvania

The Philadelphia Chapter of the Pennsylvania Society met on October 5 at the Engineers Club in Philadelphia. A report was given by John T. West, Jr., P.E., on what was being done in Harrisburg to gain recognition for the Society and respect as consultants in State affairs. In addition, Mr. T. W. Hopper spoke on Korea and Japan as it was in 1949 and illustrated his lecture with colored slides.

Illinois

The Central Illinois Chapter, ISPE, held its first Fall Meeting recently in the Tunnel Room of the St. Nicholas Hotel in Decatur. Dr. George E. Ekblaw, President, Illinois Society, was the speaker of the evening and discussed some of the activities of the State Society as related to the Chapter. Also on the program was Harry Meinert who presented a short report on the interceptor sewer program.

Wisconsin

The first meeting of the Milwaukee Chapter, WSPE, was held recently at the Engineering Society Building in Milwaukee. A buffet supper was served, followed by an address by Milton C. Rohm, Supervisor of Graduate Training, Allis-Chalmers Mfg. Co., on "Industries Students Today."

New York

The Niagara Chapter, NYSSPE, recently held a meeting in the Park Lane Hotel in Niagara Falls. Supper was served at 6:30 followed by a meeting which featured two movies, "Arizona Sun" and "Wings to Viking Land."

North Carolina

The South Piedmont Chapter of the Professional Engineers of North Carolina had its initial meeting and the installation of its first officers on September 29, in Charlotte. The South Piedmont Chapter covers an area of eleven counties which encompasses the southern half of the Piedmont section of the state.

Pennsylvania

The Pittsburgh Chapter of the Pennsylvania Society held its first Chapter meeting of the Fall Season recently at Dutch Henry's Restaurant in Pittsburgh. The speaker was R. A. Blackburn, State President, PSPE, and Past President of the Pittsburgh Chapter. His subject was "What the PSPE Is Doing For You."

Wisconsin

The Southwestern Chapter of the Wisconsin Society met on October 10 at the Blackhawk Country Club in Madison, Wisconsin. The speaker of the evening was NSPE President Sidney L. Stolte, who spoke to the Chapter about the work of the Society on a national level. The meeting was designated as guest night and each member brought along a friend or a fellow worker.

Ohio

The Central Ohio Chapter of the OSPE held its last meeting on October 10 at Shaw's Restaurant in Lancaster, Ohio. The program included a dinner followed by an inspection tour of Diamond Power Specialty Corporation, Lancaster. The inspection tour included a discussion by the company's engineering department, a trip through the plant and a question and answer period.

Wisconsin

The Fox River Valley Chapter of the Wisconsin SPE held its first Fall Meeting on October 4 at the Elk's Club in Appleton, Wisconsin. The meeting was a social one, being a dinner-dance to which wives and girl friends were invited.

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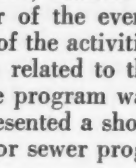

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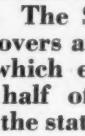

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Manpower

(*Continued from page* 7)

But, at any rate, the special committee's plan at least shows that some progress is being made toward solving one of war mobilization's knottiest problems. As far as the utilization of technical personnel in industry, it is hoped that a system fashioned after the one used in World War II will be successful. But the third leg of the triangle—the use of engineers and scientists *within* the armed forces—seems to be an unmentionable in official circles. If we are to depend upon information now public, it is obvious nothing has been done. Despite our unhappy experiences of the last war, and despite the past policies' ruinous effects upon the nation, the services, and the profession, all is quiet on that front.

What They're Saying

(*Continued from page* 16)

more glib and less exacting men who look at wider horizons end up in top administrative posts. Are not the engineers themselves to blame in a large measure by their deliberate high intensity consideration of a small field of operation?"

These foregoing opinions are not universally held. One chief engineer believes his fellow chief engineers are paid more generously, and have greater flexibility than most vice-presidents.

If this survey shows anything, it shows that the title Chief Engineer is absolutely no measure of the position or duties of an individual. Probably the main reason why there is no standard position for chief engineer is because it is no standard job. There is much disagreement among engineers themselves as to just what the job is. To quote from one of these letters: "I share your experience that a considerable heterogeneity exists with respect to the duties of the chief engineer. The difficulty, I think, will always be with us, as long as the term: 'engineer' is used to describe a man who gets more heat in the apartment, and the man who designs the B-29."

And this opinion is borne out by many of the others who answered the questionnaire.

Taking chief engineers by the industries that they serve, it is quickly seen that there is a wide difference in the main responsibilities of the jobs. For example, the survey shows that chief engineers in the automotive or machine parts industries divide their time between product design and development and administrative duties. They are not too concerned with manufacturing methods or maintenance. On the other hand, in the food, chemical, and building products industries chief engineers spend most of their time on the design and construction of plant facilities, and have few administrative duties.

The industries which place a strong administrative demand on the chief engineer also reward him with a higher official position. Whether or not this trend toward administrative duties for the engineers is healthy, is open to debate — surely, many chief engineers find that an excess of these duties tends to overshadow their main function as an engineer. The status and responsibilities of the chief engineer in industry are not fixed, but are rather in a state of development. It is possible to note increasing recognition of his work. This trend is particularly discernible in the iron and steel industry. Further clarification and understanding of the chief engineer's responsibilities and services are badly needed.

It is hoped that the present study, made possible by the cooperation of numerous representatives and chief engineers, will contribute to that end. —*By Arthur Lazarus, Vice President, Day & Zimmerman, Inc. Product Engineering*, 1950.

"ATOM-PROOFING" BLUEPRINT CALLED FOR . . .

Congress must approve a master blueprint for "atom-proofing" America against attack, Dr. Eugene Rabinowitch, research professor of biochemistry at the University of Illinois asserted recently.

Dr. Rabinowitch, who also is editor of the Bulletin of the Atomic Scientists, published in Chicago, told of the need for such a plan in an article entitled, "Civil Defense—The Long Range View," appearing in the current issue of the Bulletin, devoted to civil defense.

"The grim reality is that in the case of a massive atomic attack the main problem will be, not how to save the greatest number of lives, but how to prevent the heart-beat of the nation from stopping," he said, adding:

"Not the death of millions, but the disorganization of industry and transportation will be the main threat to our survival * * * If the emphasis on maintenance of productivity, rather than on reduction of casualties, seems to be an inhuman approach, let us remember that the first purpose of preparations to meet an atomic attack is to make this attack less likely."

American production is the only power in the world feared by Soviet leaders, Dr. Rabinowitch asserted. The chance of crippling this power will be the great inducement for these leaders to use atomic bombs against American cities, as soon as the Russians have accumulated a sufficient supply of the missiles, he contended.

"By dimming this hope we will do far more to save millions of American lives than by providing carloads of medical supplies and blood plasma for each city block, however necessary these precautions may be, or, by teaching every high school boy how to use a geiger counter," he added.

The indications are that in our civil defense planning "we have wasted five precious years," said Dr. Rabinowitch. Authorities who have been asked to contribute on the subject, he charged, "can only speak of civil defense in vague terms, and in the future tense."

There is an immense gap, he contended, between the well-understood extent of the national catastrophe that an atomic bomb attack on the United States might produce within five years, when the Soviets in all likelihood will have acquired an atomic arsenal of significant proportions, "and the parochial (defense) organization" now being planned to cope with such an assault.

"Economic, military, scientific and political experts of the highest caliber must be called upon to prepare a blueprint for national survival in the case of a massive atomic attack," Dr. Rabinowitch declared. He went on:

"It must then be decided which parts of this plan require immediate action, and which can be kept as 'stand-by" provisions to be implemented when and if needed—the timing to depend not only on the acuteness of the world political situation, but also on reliable estimates of the Soviet atomic stockpile, and of the progress toward the production of fusion (hydrogen) bombs.

"Congress must approved the blueprint for atom-proofing the American industrial, administrative and transportation system, and make it an integral part of the over-all armament effort."

Responsibility for preparing only for the limited kind of atomic attack that the Russians should be able to deliver now, or in the next few years, "could be shouldered now by an American Government firmly resolved to bring about a showdown—by war, if necessary—before the Soviet atomic arsenal reaches alarming proportions," Dr. Rabinowitch suggested.

However, he added, our Government certainly does not plan any such preventive action, and it is unlikely that America would go to war with Russia unless provoked into such conflict by Russian aggression against the United States or one of its allies.

In another article in the Bulletin on "The Strategy of Civil Defense," Dr. Ralph E. Lapp, author of "Must We Hide?" charges that in the nation's civil defense efforts "we have toyed with the problem by writing a few reports on civil defense administration," but have accomplished nothing of any real value in the last five years.

A recent announcement that $290,000 might be appropriated for the newly-created Office of Civil Defense in Washington, while almost simultaneously an expenditure of $15,000,000 was approved for construction of another Government building in the heart of the country's Capital, illustrates, he said, how in civil defense America takes one step forward and ten steps backward. — *New York Times, September* 11, 1950.

Capital Area Group Of ASEE Conducts Meeting In Maryland

The last meeting of the National Capital Area Section of the American Society for Engineering Education was held on October 3 at the Naval Ordnance Laboratory, White Oak, Maryland. The guest speaker was Mr. Thoman Hivven, Commerce Department Advisor for Foreign Economic Development. Mr. Hivven's subject was "Point Four and its Implications for Scientific and Engineering Education."

San Jacinto Chapter Of TSPE Meets At Shamrock In Houston

The San Jacinto Chapter of the Texas Society held its September meeting in the Castilian Room of the Shamrock Hotel in Houston. The program was a panel discussion regarding the relation of Sales Engineers and Consulting Engineers. There were two Sales Engineering Representatives and two Consulting Engineering Representatives to speak on the subject after which there was an open floor discussion.

Harrisburg Chapter Of PSPE Hears Talk On Synthetic Rubber

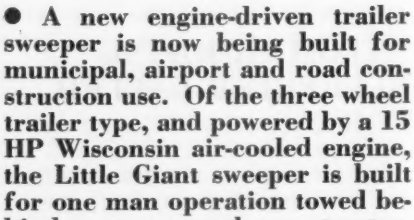
The October meeting of the Harrisburg Chapter of the Pennsylvania Society was held at the Civic Club in Harrisburg recently. After dinner, Mr. L. J. Dete, Chief Chemist in charge of control and developments in the Carlisle Tire and Rubber Company, gave an illustrated talk on the subject "Synthetic Rubber—It's Contribution to the Rubber Industry." The talk was accompanied by demonstrations and interesting platform experiments. As an added attraction, Mr. J. E. Warrell, P.E., President of the Carlisle Tire & Rubber Company and a member of the Pennsylvania Society, presented a special door prize.

Ladies Night is planned as a special gathering for the next meeting, to be held November 20. The feature entertainment of the evening will be a Pennsylvania Dutch program given by Mrs. Anna Manges Swartz of York, Pennsylvania. Mrs. Swartz will explain the historical background and dialect of the Pennsylvania Dutch, followed by monologues given in costume. Other features are planned as well.

What's New

As a service to our readers, this column will describe briefly new product developments of general interest to professional engineers. When writing manufacturers, we will appreciate your mentioning the American Engineer.

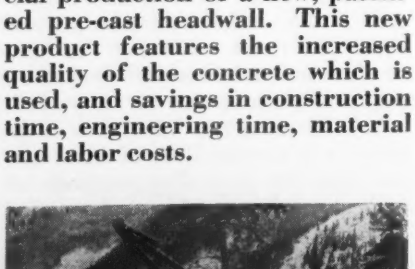
● A new engine-driven trailer sweeper is now being built for municipal, airport and road construction use. Of the three wheel trailer type, and powered by a 15 HP Wisconsin air-cooled engine, the Little Giant sweeper is built for one man operation towed behind a car, truck or tractor. Brush is available in lengths from 6 to 9 feet.



The new sweeper is already being used for cleaning the sub-surface of roads before asphalt is applied in road construction. Other intended uses are snow removal for airports and municipal maintenance.

This product is manufactured by Little Giant Products, Inc., Peoria, Illinois, and will be distributed through Little Giant sales representatives from coast to coast.

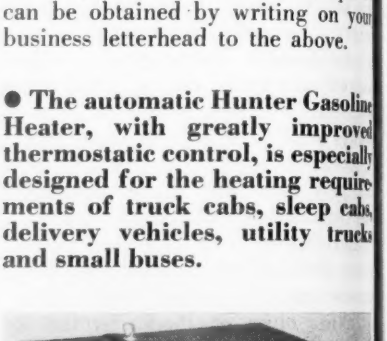
● An amazing discovery in the pre-casting of concrete, has recently been made in the commercial production of a new, patented pre-cast headwall. This new product features the increased quality of the concrete which is used, and savings in construction time, engineering time, material and labor costs.



The new pre-cast headwall is designed and engineering so that, regardless of angle or skew of the corrugated metal or concrete pipe, it fits perfectly as though cast on the job. Complete protection against freezing is given, and the new headwall is about 1000% more durable than ordinary headwalls.

For full information about the new Protex pre-cast headwall and information regarding franchise rights and franchises for manufacturing rights can be secured by writing the Protex Industries, 1331 West Evans, P. O. Box 4044, South Denver Station, Denver, Colorado. Also, blueprints can be obtained by writing on your business letterhead to the above.

● The automatic Hunter Gasoline Heater, with greatly improved thermostatic control, is especially designed for the heating requirements of truck cabs, sleep cabs, delivery vehicles, utility trucks and small buses.



It operates entirely independently of vehicle engine, providing full heat delivery under thermostatic control at all times. It eliminates the necessity of engine idling to provide hot-water heat during layover periods. It burns any type of gasoline, averaging less than one pint of fuel consumption per hour, and sub-zero starting, unfailing operation and utmost safety are assured by constant ignition and sealed-in-steel combustion with combustion gases being exhausted to the outside.

All controls are located on the heater with provisions for remote control switch if desired. Compact and finished in durable lacquer, the Hunter UH47 is easy to install in cab or any part of a vehicle. Address all inquiries to Hunter Manufacturing Co., 1550 East 17th Street, Cleveland 14, Ohio.

Letters

(*Continued from page* 19)

engineer is so broad that any one who wishes can call himself an engineer. There is nothing that the college graduate engineer can do about it. The college engineer cannot prevent the locomotive operator from calling himself an "engineer"; nor can he compel the other mechanics to change their titles; nor can he change the commonly accepted meaning of an engineer.

Mr. James F. Fairman, P.E., in his article in the September issue of AMERICAN ENGINEER, states that "a profession required that its practitioners be educated . . . that a profession involves mental rather than manual labor . . . and that it implies scholarship." Engineering, in its broad sense, does not fit this definition. Mr. Fairman "suggests that we may reasonably conclude that our calling has the earmarks of a profession, that it has the potentialities of a learned profession, but that whether or not it will be so recognized by the public depends on you and on me" . . . "Specifically let us not use the title 'engineer' in any form for people who are not engineers or for positions which do not require engineering training or experience."

The only solution is to change the title of the college graduate engineer so that the public can not possibly mistake him for the mechanic or laborer.

An attempt has been made to correct this condition. We classify ourselves as "professional" engineers. But that is not sufficient because we are still burdened with the confusing word "engineer."

Our only solution is to select some significant Latin or Greek word or term which will truly describe our profession and use that word instead of "engineer." Then only will the public consider our calling a profession.

JOHN E. LANE, P.E.,
Brooklyn 30, N. Y.

Remember AE . . .

Dear Editor:

The new format is very smart and attractive looking. There also has been an outstanding improvement in editorial content.

Suggest that you emphasize to all readers that they list THE AMERICAN ENGINEER as a magazine that they read regularly, when they fill out any questionnaires for manufacturers or others. This will improve the general knowledge of the magazine as an advertising medium.

S. A. BALKAN, P.E.,
Brookline 46, Mass.

Strides Ahead . . .

The September issue of THE AMERICAN ENGINEER arrived this morning. As usual with second class mail, the magazine was set aside but immediately picked up when I noticed the caption, "IS KOREA THE BEGINNING?" on the outside front cover page. My attention was drawn to the heavy black line with the 38 at the right end. Without opening the magazine, many thoughts passed through my mind as I studied the story told by the front cover page. This story made me ponder and pause.

The editorial on page 4, "BRINGING DREAMS OUT INTO THE DAYLIGHT" brought back to memory my first year out of college —1933 and the subsequent years that followed through to 1950. The letter from Washington: "RE The Emergency and Engineers" revealed facts to me heretofore never realized. Despite the hard slow uphill climb through the lean years of 1929-1939, engineers kept growing in numbers from less than 225,000 to more than 350,000 in 1950.

This growth in numbers brought to mind the strength of the engineering force today, which in form of an analogy also brought to mind the growth in prestige the engineering profession has gained during this same period. This prestige brought about by the untiring efforts of the NSPE and its media—THE AMERICAN ENGINEER. Yes, THE AMERICAN ENGINEER has done its part and is doing its share today. The magazine should be a "MUST" for all Engineers who are interested in keeping up with the profession at National level. I have found the magazine attractive, articles and news of untiring interest. To me, each new issue seems to be more attractive than the preceding issue in expression of thought and conveyance of a message of importance to all engineers who are interested in the betterment of their profession.

STEPHEN ARTHUR DERRY, P.E.,
Louisville 2, Ky.

Among the Best? . . .

Dear Editor:

Congratulations on your September, 1950 Issue!

This shows considerable improvement and if such a trend continues, our journal will be among the best in the country . . .

E. W. NEBEN, P.E.,
Process Engineer,
The Pfaudler Co.,
Rochester 3, N. Y.

The Bridge . . .

Dear Editor:

. . . but when I read Dr. Steinman's poem in THE AMERICAN ENGINEER I realized that we all have a part in that greater bridge building which he describes.

Thank you for printing the fine poem.

FRANK J. MOLES, P.E.,
Schenectady, N. Y.

Dear Editor:

. . . the public is apt to class the engineer as an unfeeling, harsh individual who has no interest in poetry or any of the finer things of life. They are certainly proved wrong by the beautiful poem by Dr. D. B. Steinman printed in THE AMERICAN ENGINEER.

. . . as I read the wonderful poem, it gave me a thrill which has lasted and makes me proud of the engineering profession . . .

H. SUMNER BRACKEN, P.E.,
Johnstown, Pa.

LEGAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233).

Of American Engineer published monthly at Baltimore, Maryland, for December, 1950.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, National Society of Professional Engineers, 1121 15th St. N. W., Washington, D. C.; Editor, Kenneth E. Trombley, 1121 15th St. N. W., Wash. D. C.; Business Manager, Arthur F. Beck, 1121 15th St. N. W., Wash. D. C.

2. The owner is: National Society of Professional Engineers, 1121 15th Street, N. W., Wash., D. C.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

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5. The average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semi-weekly, and tri-weekly newspapers only.)

KENNETH E. TROMBLEY, Editor

Sworn to and subscribed before me this 15th day of October, 1950.

(SEAL) MILTON F. LUNCH

(My commission expires September 14, 1952)

Why Belong?

(*Continued from page* 11)

Worthiness of Professional Engineers and Surveyors

(a) The Society has adopted a Code of Ethics which, in Pennsylvania, is printed on the back of every application card and every new member agrees to abide by this code. The same code of Ethics is now included by the State in the application for registration for either Professional Engineer or Engineer-in-Training.

(b) Each Chapter has a committee, as does the State Society, on Ethics and Practices and the functions of these committees are to not only stop violations by others but to instill in the minds of every member that they too are bound by this Code of Ethics.

(c) Some work has been done in cooperation with schools in recommending proper courses to best fit the young engineering graduate to be a credit to his profession, and our Educational Committee is making further study regarding this.

Good Citizenship

(a) Every member should be active in his church and in community affairs such as Civic Clubs, Chamber of Commerce, Red Cross, Community Chest, etc. In order to be known in our communities we must take an active part in things which affect all of the community, not just those things which are engineering. While we admittedly have not done as much of this as we should, we are beginning to awaken a sense of civic consciousness in the minds of our members.

(b) Every member should take an interest in politics, at least to the extent of seeing that he is registered and that he thinks about the issues in each election, makes up his mind what is right and then votes accordingly. We should not leave politics up to the other fellow and in many cases, engineers should become Borough Managers, members of the Legislature, or hold other political office. We could certainly use some engineering thinking in public office today. A number of our members are now holding public office.

Policing Our Profession

As an example of what I have in mind, some months ago the Pennsylvania General Assembly, during the closing days of their session, pushed through an amendment to an existing Act whereby it is no longer necessary for Professional Engineers to prepare maps of coal stripping operations. I called on the Deputy Secretary of the Department of Mines to find why this was done and to see what could be done to remedy the damage. I was told that the Coal Operators had complained that their surveying forces usually prepared the maps and made the surveys and then they had to go to a Registered Professional Engineer and pay him a fee to put his stamp on the plan. Since the Department of Mines was not making any use of these stripping maps and did not intend to, they felt that they were not justified in causing the operators to go to this expense and therefore they had agreed to this amendment.

Surely it is unethical for any Professional Engineer to put his stamp on some other person's work unless he has carefully examined the work, checked the computations and is willing to assume full responsibility for it. The Deputy Secretary brought three maps for me to see as examples, all containing the seals of Registered Professional Engineers. One was a good map properly prepared, but the other two certainly brought no credit to our profession. We admittedly have much to accomplish along these lines but we can do more by frank discussions in our meetings than by any other means.

Helping Hand to Young Engineers and Surveyors

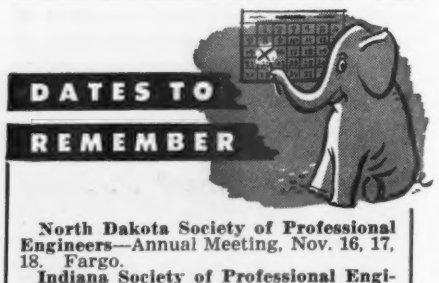
(a) Most of our chapters have or are instituting an Engineer-in-Training or Affiliate program. The Philadelphia and Pittsburgh Chapters have been outstanding in what they have accomplished by taking into their chapters Affiliates, Engineers - in - Training or others who have not yet by experience or education reached the requirements for full registration, and the chapters are helping these men to qualify themselves for registration. We certainly should continue this program with all of our efforts.

(b) We have an Educational Committee who are making a study of what can be done in the colleges with the engineering students to give them (and their professors) a professional viewpoint so that they who will later ask the public to look upon them as professional men will first learn to have a professional concept.

What has all of this to do with *our* Society and why couldn't we as individuals or members of other engineering societies accomplish as much? The Professional Engineers Society of Pennsylvania or any other State, have no other purpose than to obtain these desired objectives for its members. They are not technical societies in a sense of devoting their time and efforts to research and design—those functions are well taken care of by the so-called founder societies and every registered engineer should belong to the technical society of his branch of engineering as well as to the Society of Professional Engineers.

We are not organized for specialized branches of engineering such as the ASME, ASEE, ASCE, ASHVE, ASRE or numerous others. While these societies are excellent from a technical standpoint, they tend to divide the profession while we unite it for those purposes which are for the common good.

It is true that our chapters hold frequent meetings and sometimes discuss technical subjects but those meetings are usually, and should be, of general interest rather than of interest to just one particular branch and at these meetings there should be discussions on how we can help our communities and how we can see that competent men are secured for projects that should be engineered. Members should be kept informed on legislation which affects us and when necessary we should make ourselves heard as a united group. Some, but by no means all of our meetings should be used to



North Dakota Society of Professional Engineers—Annual Meeting, Nov. 16, 17, 18. Fargo.

Indiana Society of Professional Engineers—Annual Covention, Dec. 1 and 2. Van Orman Hotel, Fort Wayne.

Oklahoma Society of Professional Engineers—Jan. 12 and 13. Biltmore Hotel, Oklahoma City.

California Society of Professional Engineers—Jan. 19 and 20. San Francisco.

Texas Society of Professional Engineers—Annual Meeting, Jan. 25, 26 and 27. Baker Hotel, Mineral Wells.

Illinois Society of Professional Engineers—66th Annual Meeting, Feb. 1, 2 and 3. Champaign-Urbana.

secure acceptance of high ethical standards of conduct by our members. Through good fellowship and contacts, which are a by-product, our meetings will broaden us in our understanding of others so that we can get along in harmony for the benefit of all.

Certainly there is nothing wrong with that program and if it hasn't worked it is because some have tried to "take" too much and "put" in too little.

We Must Sell Ourselves

In a recent membership campaign our Headquarters Office matched members of each chapter with non-members in the chapter territory with the idea of having the members attempt to get the non-members to join the Society.

In matching these names we attempted to match those who knew each other or were neighbors or who worked with the same company, but frequently our hearts were in our mouths. Here was John Jones who was a member but who had taken no active part and seldom came to the meetings, matched to see Henry Brown who never could see anything worthwhile which was not free, or which didn't give him a prominent or highly remunerative part. What might happen? Almost anything could.

It reminded me of the familiar story of the man, who while walking across a high bridge noticed another man climbing the rail and getting ready to jump. The first man reached up and caught the would-be jumper and pulled him back to safety, and then attempted to tell him why it was not a good idea. After the two men talked for some time they both jumped!

I can remember the first selling job that I had. I had been working for a power company in the generating department and was approached by the manager of a company with whom we did a lot of business. He told me that he had already talked with the head of my department to secure his permission to talk to me and now wanted to know if I would be interested in a position of Sales Engineer for their company.

I told him that I had never sold anything and didn't know that I could. He said, "Well, you know our boilers and stokers, what do you think of them"? I said, "I know they are good because I have operated and tested them and have frequently inspected them." He said, "That is all you need." The moral of that story was, and still is, that almost anyone can sell almost anything, providing that he believes in it to the point of being enthusiastic about it.

We are proud of and enthusiastic about our Society in Pennsylvania. It was founded in 1934 and as one of the first four in the country helped organize the National Society.

We have at present over 3,000 members in our Pennsylvania Society, which, however, is about 25% of the number of registrants in Pennsylvania. We should have a much higher percentage. The medical and bar associations have a much higher percentage and look what they have accomplished toward professional recognition.

There are more than 23,000 members in the National Society of Professional Engineers made up of 35 member State and Territory Societies.

Some one may say, "All right, those objectives seem to be all right but can't we get these benefits without joining?"

Not many years ago there were many politicians who obtained political offices by riding on the coat-tails of a popular President, but few of those politicians were qualified and comparatively few still hold office and coat-tail riding is not classed as an honorable profession!

It is true that you may not derive full benefits from these objectives in your lifetime, but we should all be interested in knowing what kind of a profession we can leave to those who come after us instead of just what we can get out of it.

To illustrate what I have in mind I want to repeat a story I heard recently about a farm in one of the Baltic states. A tourist in traveling through the region noticed that one particular farm was outstanding, not in size or elaborate buildings but in the richness of the soil, the abundance and care of the crops and in the well kept buildings.

The tourist introduced himself to the farmer and asked how it was that in this region of run down and ill kept farms, this one stood out above all others.

The farmer replied, "This farm has been in my family for 400 years—handed down from father to son. Each of us has considered the heritage as a sacred trust or something which was loaned to us during our lifetime for us to improve before passing it on. Each of us has tried to make it a little better than when we received it!"

This Profession of ours is like that. We are privileged to practice it for a few years and then we hand it over to others. Whether we add to it or just take from it, will influence what kind of profession we leave behind.

I have listed those things which make up my personal professional philosophy but as a suggestion I believe it would be worthwhile for each member of our Society to set down for one-half hour and ask himself questions such as "Why should I belong?" and "What is the society trying to do?" Each one who does this will form his own personal professional philosophy which no one can ever take away from him. Then I would suggest that as a further step, we should ask ourselves, "What am I doing in addidition to just being a member?" We will get out in proportion to what we put in and perhaps if we put in more, the things we haven't liked or understood will be cleared up.

Certainly we will become more enthused and be able to convince others with the result that the entire profession will benefit and through our personal service we will obtain the personal benefits that are dividends of service.

We Can Get Away With It

(*Continued from page* 13)

requirements for journeyman status, relationship to other trades, etc. Inspection of actual jobs in progress will be frequent.

H. CLINICS. Friday afternoons, each of the four semesters are devoted to conferences, discussion groups, and/or lectures on various "facts of life" such as Civic duties and privileges; American enterprise; Physical welfare; the use of available sources of information, etc. Qualifying tests will be required the fourth semester.

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And the Pre-Engineering student completing the C. P. program will have demonstrated to himself and his professors his evident ability to progress to a B.S. or an M.S. degree —or even a higher one.

And so we CAN "get away from it" —if we have the desire to do so.

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Budget — John D. Coleman. P.E., 2520 Elsmere St., Dayton, Ohio.

Chapter Activities—Joe Williamson, P.E., P. O. Box 1548, Daytona Beach, Fla.

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